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ABSTRACT

The College-Level Academic Skills Test (CLAST) is an examination of achievement in communication skills and mathematics that is mandated by state law for college students in community colleges and state universities in Florida as a requirement for an Associate's degree or for entry into upper-level courses. Higher CLAST standards went into effect in August 1989. Results presented in this report describe the first year of transition based on higher standards. Data from previous years suggested that many college students were not prepared for the higher standards, with the essay and mathematics portions of the examination the weakest areas. In 1989-90 students performed best in Reading and English Language Skills, followed by essay and mathematics subtests. Overall passing rates of community college examinees at 52% and private college examinees (also 52%) were below that of public university students at 76%. Racial and ethnic differences are also examined, and recommendations are made to enhance student performance on the revised CLAST. Ten figures and 17 tables present test data. Three appendixes list standing committee members and summarize CLAST performance. (SLD)

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STUDENT ACHIEVEMENT OF COLLEGE-LEVEL COMMUNICATION AND MATHEMATICS SKILLS IN FLORIDA: 1989-90

Standing Committee on Student Achievement

of the

Articulation Coordinating Committee

December 1990

State of Florida
Department of Education
Tallahassee, Florida
Betty Castor, Commissioner
Affirmative action/equal opportunity employer

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STUDENT ACHIEVEMENT OF COLLEGE-LEVEL COMMUNICATION AND MATHEMATICS SKILLS IN FLORIDA: 1989-90

Executive Summary

Results presented in this report describe the first year of transition based on higher standards that went into effect in August 1989. These standards were modified in some cases. The modified standards and original 1989 standards can be compared as follows:

	Mathematics	Reading	Eng Lang Skills	Essay
Original 1989 Standards	295	295	295	5
Revised 1989 Standards	285	295	295	4

While the original 1989 standards were affirmed in Reading and English Language Skills, it was concluded that many institutions and students would still not be ready for the higher standards in Mathematics and Essay. Therefore, the State Board increased the standard for Mathematics from 275 to 285. The standard for Essay was left at 4.

PART 1. PLACEMENT TEST RESULTS

Entry testing data for 1989-90 were unavailable at the time this report was prepared. Data from previous years suggest that the college preparatory instruction experienced by Florida's first-time-in-college (FTIC) freshmen, either in high school or in postsecondary education has not prepared many of them to meet the revised 1989 standards. Mathematics and Essay writing are the two CLAST areas posing the greatest challenge for first-time examinees.

PART 2. STATEWIDE PERFORMANCE ON CLAST FOR 1989-90

In 1989-90, students tended to do best in Reading and English Language Skills followed by Essay and then Mathematics. Public university students tended to do better than either public community college or private university students. State university students tended to show small increases on all subtests as compared to previous years. Performance on each CLAST subtest declined slightly for public community college students. Private college students' performance was stable on Reading and Essay but declined slightly on Mathematics and English Language Skills. Some of the declines noted may be accounted for by larger numbers of students taking CLAST early in their college careers in order to establish the standards that would apply to them. The two areas in which standards are to be raised again are Mathematics and Essay.

PART 3. EXTENT TO WHICH THE REVISED 1989 STANDARDS WERE MET

Public university first-time examinees did the best in meeting individual subtest standards with their overall passing rate being 76%. Public community college examinees' (52%) and private college examinees' (52%) overall passing rates were below that of public university students.

The performance in the subtest areas was at or above 63% on a statewide basis. The subtest passing rates for SUS university students, based on the revised 1989 standards, were: Mathematics, 89%; Reading, 91%; English Language Skills, 87%; and Essay 95%. Passing rates for public community college students were: Mathematics, 72%; Reading, 76%; English Language Skills, 71%; and Essay 88%. Passing rates for private college and university students were: Mathematics, 63%; Reading, 75%; English Language Skills, 71%; and Essay 88%.

Previous Standing Committee reports have emphasized statewide summaries. However, aggregated data fail to illuminate issues at the individual institutional level. Bar charts, depicting individual institutions and their percentage of minority examinees, were displayed to illuminate relationships between the composition of an institution's examinees and institutional CLAST performance. The range of institutional performance is displayed. It was found that the distribution of minority examinees is highly skewed; there are very few institutions that have high or medium percentages of minority examinees. While high and medium minority institutions tend to score lower on CLAST subtests, they are by no means alone. There are as many, and in some cases more, institutions with low minority percentages whose CLAST performance falls into the lower third of all institutions. Even though it can be shown that minority students fail CLAST subtests in disproportionate percentages, achieving mastery of the college-level skills in communication and mathematics is also problematic for relatively large numbers of white students.

PART 4. TRENDS IN THE PERFORMANCE OF RACIAL AND ETHNIC GROUPS

The performance of minority students has been of concern since the beginning of the college-level skills testing program. Trend analyses were done to understand better the impact of CLAST requirements on minority students. There appear to be disproportionate impacts on minority student passing rates; the impacts are largest for CLAST Mathematics and Essay. The disproportionate impact is most evident for Black examinees as their scale score average over the years has consistently been below the baseline of 300 which was established in October 1982. While Hispanic examinees Mathematics performance began at a relatively high level in 1984-85, their performance has declined for the past three years and is currently below the baseline of 300. The Mathematics performance of Asians and American Indians remains close to that of the White examinees. Surprisingly, all groups have shown a decline in Mathematics performance during the past year. This is probably due to the larger than expected number of examinees choosing to take CLAST early to be covered by lower standards.

While the performance of all racial and ethnic groups tends to be high in CLAST Reading, disproportional impacts are still evident. There is a relatively large disparity between White examinees' and Black examinees' Reading performance. While Mathematics performance tended to decline for all groups during the past two years, Reading performance tended to remain high or to improve slightly. Trends for CLAST English Language Skills tend to parallel those for CLAST Reading.

There appears to be cause for concern regarding students' ability to meet the 1991 CLAST Essay standard of 5. There have been declines in the Essay performance of all groups except Whites. In 1989-90, Black, Hispanic and Asian students had an average Essay score of 4.2 which is substantially below the statewide baseline of 4.7.

An analysis of the numbers of students sitting for CLAST by racial or ethnic group reveals that with the exception of a single year, the number of students sitting for CLAST has increased over time; the number has increased substantially during the last two years. It seems reasonable to conclude that CLAST has <u>not</u> been a deterrent to college-level participation by minority students.

PART 5. RESULTS OF COHORT FOLLOW-UP STUDIES

Previous reports have emphasized results based on first-time examinees. This and future reports will place emphasis on results of cohort follow-up studies because longitudinal follow-up studies give a truer picture of institutional effectiveness.

The first cohort of students covered by the revised 1989 standards was in October 1989 (n=18,814). This cohort was followed for only two additional administrations of CLAST. While minority examinees experienced disproportionately higher failure rates the first time they took CLAST under the revised 1989 standards, those who failed were able to increase their performance level significantly upon retaking the failed subtests. All examinees showed a gain of 14.1 percentage points after retaking failed subtests. Minority students showed greater gains than majority students: Blacks gained 16.3 percentage points in passing four-out-of-four; Hispanics gained 17.7 percentage points; and Whites gained 12.6 percentage points after retaking failed subtests.

PART 6. IMPLICATIONS OF CURRENT STUDENT PERFORMANCE REGARDING ACHIEVEMENT OF THE REVISED 1989 STANDARDS

The revised 1989 standards had the greatest impact on public community colleges and private colleges and universities. Slightly over half (52%) of the examinees in these institutions passed four-out-of-four CLAST subtests on their first try. SUS university examinees fared better as 76% of them satisfied all CLAST standards on their first attempt.

While White students had the high passing rate (76%) under the revised 1989 standards, they also comprised the largest number who failed CLAST subtests (n = approximately 12,682). Blacks had the lowest passing rate (33%); approximately 4,399 of them will need to retake failed subtests. The passing rate for Hispanics was 37%; approximately 5,285 will need to retake the failed subtests. Forty-six percent (46%) of the Asian examinees passed on the first try; approximately 891 will need to retake one or more subtests. The passing rate for American Indians was 55%; the number of Indians having to retake CLAST is approximately 65. While minority examinees display disproportionately lower passing rates than White examinees, in absolute numbers more White students will need to retake failed subtests compared to the absolute number of minorities. Comparing percentages masks the fact that larger numbers of White students fail CLAST than do minorities.

PART 7. PROCEDURES AND INSTITUTIONAL PRACTICES TO ENHANCE STUDENT PERFORMANCE ON CLAST

CLAST printouts and data tapes are routinely provided to each postsecondary institution testing its students. One of the ongoing challenges for institutional personnel is how to use CLAST data as a tool to improve student learning. While some institutions have made good use of CLAST data to identify gaps in student performance, others have <u>not</u>.

There is substantial evidence to suggest that passing the mathematics requirement will be difficult for many students in Florida. An earlier study showed that a sample of examinees who failed CLAST two or more times either failed to take college preparatory classes in mathematics in high school, or if they took such courses they received low grades in them. Another difficulty is likely to be the CLAST Essay whose passing standard is due to be raised to 5 in August 1991. Teaching essay writing and tutoring in mathematics are labor intensive instructional processes. Postsecondary institutions will need to find effective ways to deploy their faculty to meet the challenge of the standard of 5 in Essay writing and 295 in Mathematics.

Public postsecondary institutions were required to submit plans to improve their students' CLAST performance. Several commonalities were found among the plans; they included: enhancement of advisement and tracking systems; seeking early diagnosis of skill deficiencies; providing review courses; providing opportunities to be tested with CLAST-like tests; increasing student accountability; increasing accountability for teaching CLAST skills; providing more role models for minority students; increasing student and faculty awareness of CLAST requirements; providing faculty development and rewards for effective teaching in mathematics or communication; enhancing articulation between secondary and postsecondary institutions. Results of another study identified the kinds of administrator characteristics observed at high performing institutions. These characteristics are summarized in the report.

PART 8. RECOMMENDATIONS

The College-Level Academic Skills Program (CLASP) was mandated by the Florida Legislature when it enacted HB 1689 in 1979. The program has been in operation for almost ten years; the desired standards will be completely in place in August 1991. The purpose of the recommendations which follow is to suggest what institutions and policy makers can do to help students acquire effective levels of skill in communication and mathematics.

Reporting and Advising

1. The Department of Education should develop a CLAST student report for follow-up and advising.

2. Students should be advised to begin taking the required Gordon Rule mathematics and writing courses during their first 18 college-level credit hours prior to taking the CLAST.

Placement Testing

3. The Department of Education should develop one placement test for use in academic advising.

Articulation

4. The Department of Education should involve the Division of Public Schools in articulation efforts between high schools and colleges regarding the college-level skills in mathematics and communications.

Preparation for CLAST

5. Institutions should require students to show that they have engaged in appropriate remedial activities prior to retaking a CLAST subtest which they have failed.

6. The Department of Education should develop a CLAST practice test for optional use by students in Florida's postsecondary institutions.

7. The Department of Education should develop CLAST-related instructional packages to assist students to prepare for the test.

Feedback to Students

8. Students who fail the CLAST Essay should be permitted to request and receive a copy of the essay; a fee should be charged to defray costs.

Waiver Policy

9. Postsecondary institutions in Florida should be discouraged from granting waivers for failed subtests except in extreme cases where it can be documented that the student has acquired the skills to the level required by the subtest.

Authentic Testing

10. The Mathematics Skills Task Force should be encouraged to increase the number of production items included on CLAST.

Evaluation of Improvement Efforts

11. Each Florida postsecondary institution should use CLAST data to evaluate the effectiveness of its CLAST performance improvement plan.

Maintaining Standards

12. The Standing Committee on Student Achievement endorses the CLAST standards which will go into effect in August 1991.

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INTRODUCTION

Higher CLAST standards went into effect in August 1989. These standards were modified in some cases. The modified standards and original 1989 standards can be compared as follows:

	Mathematics	Reading	Eng Lang Skills	Essay
Original 1989 Standards	295	295	295	5
Revised 1989 Standards	285	295	295	4

While the original 1989 standards were affirmed in Reading and English Language Skills, it was concluded that many institutions and students would still not be ready for the higher standards in Mathematics and Essay. Therefore, the State Board increased the standard for Mathematics from 275 to 285. The standard for Essay was left at 4.

Results presented in this report describe the first year of transition based on higher standards. Continuity with past results is maintained by reporting trends based on averages. Discontinuities appear when data are interpreted in terms of the number or percent of students passing CLAST. The discontinuity is most evident when analyzing cohort follow-up data. The first cohort that could be established was in October 1989. Therefore, the progress of this cohort could only be tracked for two subsequent administrations of CLAST. Interpreting the cohort data will be more meaningful as additional CLAST administrations are carried out.

It is the intent of the Standing Committee on Student Achievement to report on the status of student achievement in ways that can assist in problem solving and decision making. This report has been formatted to facilitate such efforts. While the emphasis of this report is on statewide results, the data analysis techniques and data displays used herein can also serve as models for application to individual institutional data.

The report is presented in eight parts:

- Part 1 presents results of placement testing for first-time-in-college students, the questions that should be answered regarding the effectiveness of current entry testing and course placement practices, and findings.
- Part 2 reports on the status of student achievement on the College-Level Academic Skills Test for the academic year 1989-90 and describes trends in performance since the beginning of the College-Level Academic Skills Program.
- Part 3 reports the extent to which the revised 1989 standards were met by students taking CLAST in 1989-90. Distributions of institutional passing rates are related to minority composition.
- Part 4 presents analyses of trends regarding the number of students sitting for CLAST and the success of racial and minority groups in passing subtests.
- Part 5 reports on the results of cohort studies which show what happens to first-time test-takers as they retake CLAST based on the revised 1989 standards.
- Part 6 estimates the impact of the revised 1989 standards and derives implications regarding which students and how many will need to retake CLAST.
- Part 7 presents information on the areas in which students are likely to have difficulty and institutional practices which can be used to enhance student performance on CLAST.

- Part 8 presents recommendations regarding testing practices and procedures for improving student performance on CLAST.

This report could not have been prepared without the assistance of many people. They include Dr. Thomas Fisher, Director of Assessment, Testing, and Evaluation, and his staff. CLAST results were provided by the Statewide Test Administrator's office at the University of Florida in Gainesville. Staff in the Center for Policy Studies in Education, Florida State University, provided assistance with data analysis and the production of tabular displays and drafts of this report. They include: Pung-Kil Lee, Marc Resnick, and Dennis Tishken. The assistance of these individuals and agencies is gratefully acknowledged.

PART 1. PLACEMENT TEST RESULTS

Provisions of State Board of Education Rules 6A-10.0313(3) and 6A-10.0314(2), FAC, require that community colleges and state universities provide students entering college-credit programs with entry-level advising which uses placement test scores derived from tests which measure communication and mathematics skills. Students who score below designated cutoff scores should be enrolled in college preparatory courses. The purpose of Part 1 is to report on the status of students' levels of skills in communication and mathematics upon entry to college and to assess the extent to which entry testing and course placement are being implemented. The data are presented over a three-year period so that current trends may be reviewed.

1.1 How many freshmen students required college preparatory instruction at entry in 1989-90?

Unfortunately, entry testing data for 1989-90 were unavailable at the time this report was prepared. Therefore, the summaries presented below cover results obtained through 1988-89 only. Data for first-time-in-college (FTIC) freshmen for academic years 1986-87, 1987-88 and 1988-89 are presented in Tables 1.1 and 1.2. Results are presented by placement test area.

Public Community College Freshmen

As in previous years, mathematics appears to be the area in which community college FTIC students are most deficient. In 1988-89, almost one-half qualify for college preparatory instruction in mathematics as compared to approximately one-fourth in English Language Skills and Reading.

Mathematics. According to data reported in 1988-89 by the State Board of Community Colleges, approximately 68,495 FTIC students from Florida high schools enrolled in public community colleges. As can be seen in Table 1.1, of the 67,873 FTIC freshmen with placement scores in mathematics, 32,537 (or 48%) scored below the cutoff on a state approved mathematics placement test.

English Language Skills. The number who scored below the cutoff for English language skills was 16,669 (or 24%).

Reading. The number who scored below the cutoff for reading was 17,454 (or 26%).

Public University Freshmen

First-time-in-college (FTIC) freshmen enrolled in SUS universities appear to be relatively well-prepared as less than 10% of them score below cut-off scores on an approved placement test.

Mathematics. According to data reported by the SUS Board of Regents, there were 16,092 FTIC students enrolled in state universities. As can be seen in Table 1.2, 899 (or 6%) scored below the cutoff on a state-approved mathematics placement test.

English Language Skills. The number of university FTIC freshmen who scored below the cutoff in English language skills was 547 (or 3%).

Reading. The number who scored below the cutoff score in reading was 624 (or 4%).

Table 1.1

Number and Percent of First-Time-in-College Freshmen Eligible For and Enrolled in College Preparatory Instruction in Florida's Public Community Colleges, 1986-87 through 1988-89

Academic Skill Area	1986-87*	1987-88	1988-89	1989-90
Mathematics				
No FTIC Students	65,469	62,973	67,873	
Eligible for	33,329	31,416	32,537	
% Eligible for	51%	50%	48%	
Enrolled in	15,942	18,756	19,211	
% Enrolled in	48%	60%	59%	
Eng Lang Skills				
No FTIC Students	65,608	62,875	68,495	
Eligible for	19,888	17,392	16,669	
% Eligible for	30%	28%	24%	
Enrolled in	11,047	11,620	10,448	
% Enrolled in	56%	67%	63%	
Reading				
No FTIC Students	68,236	64,183	67,260	
Eligible for	18,631	15,858	17,454	
% Eligible for	27%	25%	26%	
Enrolled in	8,689	9,314	9,518	
% Enrolled in	46%	59%	55%	

* The four entry tests and their associated cutoff scores were approved in 1985.

1.2 How many FTIC students who required preparatory instruction received it in 1989-90?

Public Community College Freshmen

The way data are collected may be misleading regarding the number of students who enroll for college preparatory instruction during their first semester. According to 6A-10.0315(6), FAC, only full-time students who are registered for at least twelve (12) credits must enroll for college preparatory instruction based on their placement test scores. Part-time students shall enroll prior to completing twelve (12) credits. Therefore, the number of students who were eligible for and eventually enrolled for college preparatory instruction in compliance with 6A-10.0315(6) is probably underestimated by the data presented in Table 1.1.

Mathematics. Fifty-nine percent (59%), or slightly more than half, of the community college FTIC students from Florida who were identified as being below the cutoff score in mathematics, enrolled for a college preparatory course in mathematics.

Table 1.2

Number and Percent of First-Time-in-College Freshmen Eligible For and Enrolled in College Preparatory Instruction in Florida's Public Universities, 1986-87 through 1988-89

Academic Skill Area	1986-87*	1987-88	1988-89	1989-90
Mathematics				
No FTIC Students	14,611	14,606	16,092	
Eligible for	1,073	789	899	
% Eligible for	7%	5%	6%	
Enrolled in	468	401	670	
% Enrolled in	44%	51%	63%	
Eng Lang Skills				
No FTIC Students	14,611	14,606	16,092	
Eligible for	690	359	547	
% Eligible for	5%	2%	3%	
Enrolled in	257	180	346	
% Enrolled in	37%	50%	75%	
Reading				
No FTIC Students	14,611	14,606	16,092	
Eligible for	751	529	624	
% Eligible for	5%	4%	4%	
Enrolled in	290	241	405	
% Enrolled in	39%	46%	65%	

* The four entry tests and their associated cutoff scores were approved in 1985.

English Language Skills. The situation in English is more favorable as 63%, almost two-thirds, enrolled for a college preparatory course in English.

Reading. Fifty-five percent (55%) enrolled for a college preparatory course in Reading.

Public University Freshmen

Mathematics. According to data reported by the SUS Board of Regents, 670 (or 75%) of the students who scored below the cutoff score on a mathematics placement test enrolled in an appropriate college preparatory mathematics course.

English Language Skills. Of the 547 university students who scored below the cutoff score on an English language skills placement test, 346 (or 63%) enrolled in an appropriate college preparatory English course.

Reading. Of the 624 university FTIC students who scored below the cutoff score on reading, 405 (or 65%) enrolled in an appropriate reading course.

1.3 Are entry testing and placement practices working effectively?

This question cannot be answered for lack of relevant data. An earlier study (Florida Community-Junior College Inter-Institutional Research Council, undated) found that students and their instructors had positive attitudes toward the college preparatory courses the students were placed in. While such opinion data are encouraging, there are other problems which need to be addressed.

First, a study done by Department of Education staff found that placement test cut-off scores were not in concordance, i.e., of equivalent meaning. This means that whether a student is identified as eligible for college preparatory instruction depends on which placement test he/she has taken. Second, effectiveness of college preparatory courses, e.g., in writing, needs to be evaluated using grades received in related college-level courses in that subject.

1.4 What is the dropout rate of first-time-in-college minority students? First-time-in-college non-minority students?

State Board of Community Colleges staff stated that there have been no recent dropout studies done on minority students. However, a student-level database is being developed. This database will be used to conduct dropout studies in the future.

Board of Regents staff were preparing a dropout study which was not available in time to be included in this report. The Regents' study covers ten cohorts with each cohort's dropout rate being analyzed each year for six years after matriculation.

1.5 What is the status of entering students' skills in mathematics and communication at entry to postsecondary education?

Evidence to answer this question is indirect because four different entry level tests are used and each has different cutoff scores. However, if we look at how many students score below the approved cutoff scores, we can make inferences about the status of their skills in communication and mathematics at entry to college.

There is a substantial difference in the entering mathematical abilities of Florida FTIC freshmen who enter Florida's community colleges as compared to those who enter public universities. Almost half (48%) of community college freshmen require college preparatory instruction in mathematics as compared to 6% of the university freshmen.

Differences in English language skills and reading were not as pronounced in 1988-89. The percentage of students scoring below approved cutoff scores was 24% for community college students versus 3% for university students. The figures were similar for reading: 26% versus 4%, respectively.

1.6 Have entering freshmen's skills in communication and mathematics improved?

Community College Students. No data based on common measures of communication and mathematics skills have been collected to answer this question. The best that could be done was to make inferences from the number of students who scored below the cutoff

scores on placement tests, assuming that a reduction in the number scoring below the cutoffs implies an improvement in entering skills.

Following this line of reasoning, we found gradual improvement in community college FTIC freshmen's skills in communication and mathematics (see Table 1.1). In 1986-87, the number of FTIC students eligible for preparatory mathematics was 51%; the percentage decreased in each of the subsequent years, 50% and 48% respectively. Similar results were found in English language skills with 30% being eligible in 1986-87, followed by subsequent reductions in each of the subsequent two years, i.e., 28% and 24% respectively.

Results were relatively stable in Reading with the percentage for the three academic years being 27%, 25% and 26%, respectively.

University Students. As can be seen in Table 1.2, the vast majority of university students scored above the cutoff scores on the approved placement tests. The number who scored below cutoff scores has been 7% or less for the 1986-87, 1987-88 and 1988-89 academic years. In 1988-89, 6% were eligible for college preparatory mathematics, 3% for college preparatory English, and 4% for remedial Reading.

1.7 How effective are course placement and college preparatory instruction in helping students acquire college-level skills in communication and mathematics?

Carefully designed cohort studies are needed to answer this question. An appropriate indicator of the effectiveness of placement practices would be grades earned in subsequent college level mathematics or English courses.

The effectiveness of placement practices and preparatory instruction could be inferred from CLAST results. It must be acknowledged that these results provide indirect evidence at best. Results presented in this report (see Table 3.1) show that community college and university students have not done as well in meeting the revised 1989 standards. While SUS university students demonstrated passing rates of 87% or higher on CLAST subtests, community college students did less well. Three of four passing rates dropped into the 70% range--these being 71% in English Language Skills, 72% in Mathematics, and 76% in Reading.

Current placement practices and preparatory instruction appeared to work reasonably well in terms of the 1986 standards; however, passing rates have dropped for first-time test-takers based on the revised 1989 standards. It seems clear that the college preparatory instruction experienced by Florida's FTIC students, either in high school or in postsecondary education, has not prepared many of them to meet the revised 1989 standards (see Table 6.1).

Reference

Florida Community-Junior College Inter-Institutional Research Council. (Undated). A Study to Evaluate Entry Level Placement Based on State Approved Tests in Florida Community Colleges. Gainesville, FL: Institute of Higher Education.

PART 2. STATEWIDE PERFORMANCE ON CLAST FOR 1989-90

CLAST data for students in public community colleges, state universities and private colleges are presented in separate tables (see Tables 2.1, 2.2 and 2.3). The status of student achievement may be determined by comparing current average CLAST scores with scale score averages calculated in October 1982, the baseline year in which scale scores were standardized to have an average of 300 for Mathematics, Reading and English Language Skills[1] and 4.7 for the Essay. Data summaries presented in Part 2 are all based on first-time examinees.

2.1 What is the level of student performance of college-level skills in communication and mathematics in 1989-90?

In 1989-90, the level of student CLAST performance appears to be related to the specific subtest involved and to the kind of institution in which students were enrolled. In general, students tended to do best in Reading and English Language Skills followed by Essay; Mathematics was the lowest area of performance. Public university students tended to do better than either public community college or private university students. Results for each kind of institution are given below.

Table 2.1
Average CLAST Subtest Scores for Public Community College First-Time Examinees, Academic Years 1984-1990

Subject	Oct-82*	84-85	85-86	86-87	87-88	88-89	89-90
Mathe-matics	300	309	308	309	309	305	300
Reading	300	316	314	312	309	315	314
Eng Lang Skills	300	313	314	317	317	314	313
Essay	4.7	4.9	5.0	5.0	4.8	4.8	4.7
No. of Students		16,776	17,458	18,214	24,415	31,467	40,784

* CLAST Subscales were standardized to have an average of 300 for Mathematics, Reading, and English Skills, and 4.7 for the Essay; these averages were based on 12,393 first-time test-takers representing all racial and ethnic groups.

Public Community Colleges. Community college student performance in Reading and English Language Skills was maintained at levels substantially higher than the October 1982 baselines as their statewide averages were 314 for Reading and 313 for English Language

[1] After each administration of CLAST, scores for Mathematics, English Language Skills and Reading are adjusted, using a procedure developed by Rasch, so that subtest difficulty is maintained equivalent to the level of difficulty of the October 1982 test.

Skills. However, their performance declined to match the October 1982 baselines in Mathematics and Essay, these being 300 and 4.7 respectively (see Table 2.1).

Table 2.2
Average CLAST Subtest Scores for State University System First-Time Examinees, Academic Years 1984-1990

Subject	Oct-82*	84-85	85-86	86-87	87-88	88-89	89-90
Mathe-matics	300	314	308	314	317	315	316
Reading	300	324	319	320	318	327	329
Eng Lang Skills	300	321	320	325	328	325	327
Essay	4.7	5.1	5.1	5.2	5.1	5.2	5.3
No. of Students		17,726	17,264	17,147	19,762	21,264	21,426

* CLAST Subscales were standardized to have an average of 300 for Mathematics, Reading, and English Skills, and 4.7 for the Essay; these averages were based on 12,393 first-time test-takers representing all racial and ethnic groups.

SUS Universities. The CLAST performance of SUS university first-time examinees was maintained at levels substantially higher than the October 1982 baselines. As can be seen in Table 2.2, SUS university students' CLAST scale score averages in 1989-90 were 316 in Mathematics, 329 in Reading, 327 in English Language Skills, and 5.3 in Essay.

Private Colleges and Universities. Beginning in August 1985, students in Florida's private postsecondary institutions receiving state financial aid had to obtain passing scores or enroll in a course to remediate basic skills deficiencies to maintain their eligibility for state financial aid awards (6A-20.005, FAC). Students in Florida's private colleges and universities began taking CLAST in the 1984-85 academic year. Since that time, many private institutions have chosen to require all students to take CLAST. As can be seen in Table 2.3, the number of private college students sitting for the test has increased from 1,583 in 1984-85 to a high of 6,159 in 1988-89.

As can be seen in Table 2.3, the private college student average in Mathematics was 296 which is four points below the October 1982 baseline of 300. However, performance on other CLAST subtests was maintained at levels substantially above the 1982 baselines. Reading and English Language Skills scale score averages were 316 and 315, respectively. The Essay scale score average was 4.9--which was above the baseline average of 4.7.

2.2 Is there improvement in college-level skills achievement?

Whether there has been improvement in CLAST performance can be determined by examining scale score averages over time. The picture here is a variable--again depending on the kind of postsecondary institution and the specific subtest involved. State university students tended to show small increases on all subtests as compared to previous years. Performance on each CLAST

Table 2.3
Average CLAST Subtest Scores for Private College and University First-Time Examinees, Academic Years 1984-1990

Subject	Oct-82*	84-85	85-86	86-87	87-88	88-89	89-90
Mathematics	300	307	303	305	304	300	296
Reading	300	319	319	313	310	316	316
Eng Lang Skills	300	316	317	319	321	316	315
Essay	4.7	5.2	5.2	5.1	4.9	4.9	4.9
No. of Students		1,583	3,717	3,888	4,362	6,159	5,859

* CLAST Subscale were standardized to have an average of 300 for Mathematics, Reading, and English Skills, and 4.7 for the Essay; these averages were based on 12,393 first-time test-takers representing all racial and ethnic groups.

subtest declined slightly for public community college students. And private college students' performance was stable on Reading and Essay but declined slightly on Mathematics and English Language Skills.

Public Community Colleges. As can be seen in Table 2.1, the performance of community college first-time examinees displays variable patterns. For example, Mathematics scores reached their highest levels in 1986-87 and 1987-88 but have declined in each of the last two academic years. After notable increases in previous years, community college student mathematics performance dipped to the baseline average of 300. This was also the case in Essay with 1989-90 average performance being 4.7.

SUS Universities. The pattern of performance of SUS university students continued to remain either relatively high or show positive gains during the past three academic years (see Table 2.2). After reaching a high of 317 in Mathematics in 1987-88, public university students showed a two point decline in 1988-89 followed by a one point gain in 1989-90 for an average of 316. Scores in English Language Skills followed a similar pattern with a high of 328 being achieved in 1987-88 followed by a three point decline in 1988-89, and then a two point gain to 327 in 1989-90.

After fluctuations during earlier years, consistent gains have been noted in Reading and Essay in 1988-89 and 1989-90. As can be seen in Table 2.2, Reading scale scores dipped to 318 in 1987-88 but increased to 329 in 1989-90. The same pattern was observed in Essay with performance increasing to an all-time high of 5.3 in 1989-90.

Private Colleges and Universities. The mathematics scores of private college students have declined over the past four years to an all time low of 296--which is four points below the statewide baseline of 300 established in October 1982. However, performance on all other CLAST subtests continued above the 1982 baselines. Reading scores remained constant at 316 while English Language Skills dipped from 316 to 315. Essay scale score averages were maintained at 4.9 the past three years.

Discussion

Some of the declines noted above may be accounted for by the fact that students could take CLAST as soon as they arrived on campus. Legislation allowing this was enacted in 1988. This seems to be the case for public community colleges in 1988-89 and 1989-90 as the number taking CLAST in these institutions increased by approximately 7,000 to 9,000 students in those two years; these were larger than expected increases. The CLAST standards were scheduled to go up in August 1989; students must meet the standards that are in effect at the time they first take CLAST. Therefore, many students appear to have taken CLAST early in order to establish the standards that would apply to them.

A similar pattern was noted in private colleges and universities--with an exception. The number of private college students sitting for CLAST in 1989-90 decreased. In addition, mathematics was the only area in which performance decreased significantly for private college students.

When SUS university students take CLAST seems to be unrelated to how well they perform (see Table 2.2) because university student performance tended to remain high or increase. In any case, public university students seemed to be better prepared when they take CLAST for the first time inasmuch as their performance continued to be maintained at relatively high levels. It is interesting to note that the Mathematics and Essay subtests appear to be the lowest areas of performance for private as well as public college and university students.

The next section of the report addresses how well students were able to meet the revised 1989 standards.

PART 3. EXTENT TO WHICH THE REVISED 1989 CLAST STANDARDS WERE MET

For readers who may be unfamiliar with the revised 1989 standards, two subtests are of particular interest: Mathematics and Essay. For Mathematics, the revised standard is 285--ten points less than the original 1989 standard of 295. The standard for Essay remained at 4--the same as for 1986. Standards for Reading and English Language Skills are each 295--in keeping with the original 1989 standards.

3.1 In 1989-90, what percentage of first-time examinees in public and private postsecondary institutions passed each CLAST subtest based on the revised 1989 standards?

SUS university first-time examinees did best in meeting individual subtest standards. Their highest performance was noted on the Essay. Surprisingly, their lowest area was English Language Skills. Public community college students' and private college students' performance was below that of public university students. The performance of community college and private university students was almost identical. Detailed results for each kind of institution are presented below.

Table 3.1

Percentage of First-Time Examinees Passing Each CLAST Subtest and All Four, Based on Revised 1989 Standards for Public and Private Community Colleges and Universities, for 1989-90

Group	Mathe-matics	Reading	Eng Lang Skills	Essay	Passed All Four
Community Colleges (n=40,784)	72	76	71	88	52
State Universities (n=21,426)	89	91	87	95	76
Private Colleges (n=5,859)	63	75	71	88	52

Public Community Colleges. The best performance for community college first-time examinees was on the Essay as 88% of them met or exceeded a score of 4 (see Table 3.1). This is encouraging since essay writing has been among the most difficult skill areas. However, a score of 4 represents no increase from the 1986 standards. The next to highest performance was observed in Reading where 76% of the examinees met or exceeded the cut-off score of 295. Mathematics was the next most difficult area for community college examinees as only 72% met the standard of 285. Surprisingly, the lowest area of performance was in English Language Skills with only 71% of first-time examinees meeting or exceeding the cut-off score of 295.

SUS Universities. State university first-time examinees performed well as 87% or more of them met or exceeded the revised 1989 standards on each subtest (see Table 3.1). Their best area was on the Essay with 95% meeting the cut-off score of 4. Reading was their

next best area as 91% met or exceeded the cut-off score of 295. Eighty-nine percent (89%) of the university first-time examinees passed Mathematics at the revised standard of 285. Surprisingly, English Language Skills (which has been among the highest areas of past performance) presented the most difficulty with only 87% meeting the cut-off score of 295.

Private Colleges and Universities. The performance of private college and university students was similar to the performance of students in Florida's public community college (see Table 3.1). Their best performance was on the Essay with 88% meeting the cut-off score of 4. This was followed by 75% pass on Reading and 71% pass on English Language Skills. Mathematics performance was the lowest as only 63% of the private college first-time examinees met the revised cut-off score of 285.

3.2 In 1989-90, what percentage of first-time examinees passed all four subtests based on the revised 1989 standards?

Because CLAST is a criterion-referenced test, examinees must pass all four subtests to meet the minimum standards for the college-level skills in communication and mathematics. Using the criterion-referenced approach is an effective way to ensure that students have acquired an acceptable level of performance on the college-level skills.

While performance in each of the subtest areas is at or above 63% on a statewide basis, the passing rate for four-out-of-four drops to 52% for both private colleges and public community colleges (see Table 3.1). State university examinees did best as 76% of them were able to pass four-out-of-four on their first attempt. The reduction in number passing four-out-of-four subtests shows that many students have acquired an acceptable level of skill in some areas, but not in all four.

According to current policy, students may retake failed subtests. This is sound educational practice and ensures that all students seeking postsecondary degrees will have the opportunity to demonstrate that they have achieved the college-level skills in communications and mathematics. How well students do upon retaking CLAST is reported in Part 5 of this report.

3.3 What has been the impact of allowing lower division students to take CLAST before they have acquired 50 credit hours?

Prior to March 1988, only students with 50 or more credit hours were permitted to take CLAST. Beginning in March 1988, even beginning freshmen could sit for CLAST. This was done to enable students to challenge the test at their convenience.[1] Taking the test early would also provide students with feedback on areas in which they might need additional review and instruction.

As can be seen in Table 3.2, there appear to be two primary impacts from allowing students to take CLAST according to their choice: (1) a significant increase in the number of community college students sitting for the test (see Table 2.1); and (2) relatively low passing rates for community college and private college students with under 60-credit hours. The performance of community college and private college examinees appears to differ from the performance of public university examinees--especially for the group with under 60-credit hours (see Table 3.2). It is interesting to note that university examinees who reported

[1] This is no longer allowed; the 1990 legislature enacted a law which requires students to have completed 18 credit hours of college-level work before they can sit for CLAST.

having under 60-credit hours tended to out-perform all other groups with a 79% pass rate on CLAST.

Table 3.2

Percent of First-Time Examinees with Over 60- or Under 60-Semester Hours, Meeting 1989 Standards, Passing Each Subtest and All Four, for Public and Private Institutions, for 1989-90

Group	Mathe-matics	Reading	Eng Lang Skills	Essay	Passed All Four
Community Colleges:					
Over 60-Hours (n=17,683)	79	82	77	91	61
Under 60-Hours (n=23,101)	66	70	67	86	46
State Universities:					
Over 60-Hours (n=9,027)	84	90	86	94	72
Under 60-Hours (n=12,399)	92	92	88	96	79
Private Colleges:					
Over 60-Hours (n=3,239)	65	78	73	89	54
Under 60-Hours (n=2,620)	62	72	69	86	51

The performance of university examinees with over 60-hours was similar (72% pass) but not quite as high as university examinees with less than 60-hours (79% pass). Community college students and private college students with under 60-hours did least well, their passing rates being 46% and 51%, respectively.

These results can probably be explained by the amount of prior preparation which students experienced before they took CLAST. Recent university enrollees seem to be the best prepared while community college and private college examinees with under 60-hours of college credit appear to be the least prepared for CLAST. A caveat is in order: it should be noted that whether a student had over- or under-60 college credits was based on student self-report. How accurate these self-reports were is unclear. Given these results, taking appropriate courses in mathematics and communication before taking CLAST should enhance the first-time passing rates for community college and private college students.

3.4 Has there been improvement in the percentage of first-time examinees meeting the revised 1989 CLAST standards?

It is not possible to answer this question at this time since there are data for only one year based on the revised 1989 standards. However, it is interesting to note historical trends related to the 1986 standards.

Table 3.3

Number and Percent of First-Time Examinees at Public and Private Universities and Colleges Meeting the 1986 and 1989 Standards, 1984-85 Through 1989-90

	84-85*	85-86*	86-87	87-88	88-89	89-90
Community Colleges:						
Percent Meeting '86 Standards	81	81	82	80	79	--
Percent Meeting '89 Standards	--	--	--	--	--	52
Number of Examinees	16,775	17,458	18,214	24,464	31,467	40,784
State Universities:						
Percent Meeting '86 Standards	85	85	86	87	89	--
Percent Meeting '89 Standards	--	--	--	--	--	76
Number of Examinees	17,726	17,264	17,008	19,826	21,264	21,426
Private Colleges & Universities:						
Percent Meeting '86 Standards	--	--	--	76	73	--
Percent Meeting '89 Standards	--	--	--	--	--	52
Number of Examinees	1,583	3,717	3,888	4,362	6,159	5,859

* The 1986 standards went into effect in August 1986. Passing rates for prior years were estimated by applying the 1986 standards to student CLAST scores in 1984-85 and 1985-86.

As can be seen in Table 3.3, the percentage of community college students meeting all CLAST standards reached a high point (82% pass) in 1986-87 and declined gradually in 1987-88 (80% pass) and 1988-89 (79% pass). The reverse seems to be true of SUS university students as their percentage passing based on the 1986 standards increased gradually starting in 1985-86 (85% pass) and continuing through 1988-89 (89% pass). The decline in community college student performance could be explained by the larger than expected increases of community college students sitting for CLAST, during those years, in order to be held accountable for the 1986 standards. A similar pattern can be noted for

private college and university students in that their overall performance also declined as the number taking the CLAST increased dramatically from 1987-88 and 1988-89. (Results for private colleges and universities could be affected by the fact that students who wish to receive state financial aid are the only ones required to take CLAST. Some of the private institutions are beginning to require all of their students to take CLAST as a matter of policy to keep pace with developments in Florida's public sector of postsecondary education.)

3.5 What is the distribution of CLAST performance by institution?

Previous Standing Committee reports have emphasized statewide summaries. While this is useful for understanding aggregate data, statewide summaries fail to illuminate issues at the individual institutional level. Questions which come to mind at this level include: How homogeneous is institutional performance on CLAST? Which students typically have difficulty with CLAST subtests? Is performance related to the proportion of minority students sitting for the test?

To gain insight into these questions, bar graphs displaying individual institutions were prepared to facilitate visual analysis. In addition, institutional passing rates were examined to determine whether they were related to an institution's proportion of minority examinees.

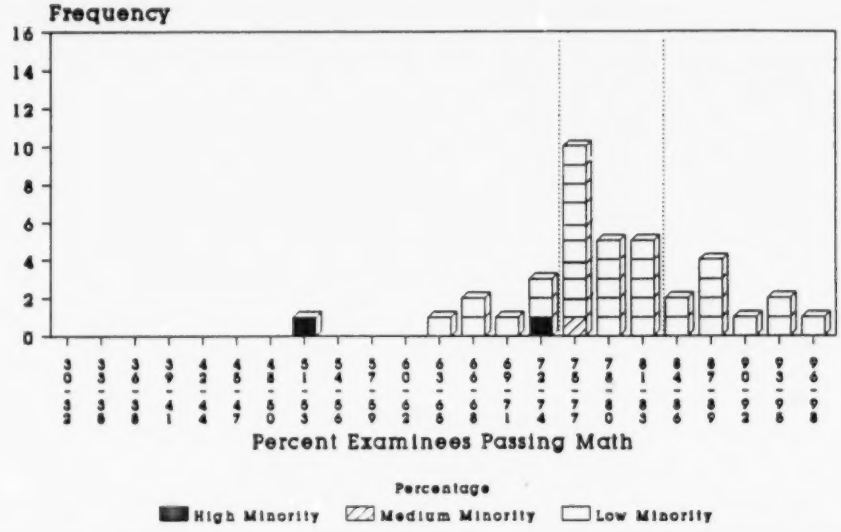
Distribution of Minority Examinees. The percentage of minority students sitting for CLAST was calculated using data from the Fall 1989 administration. These calculations showed that the proportion of minority students (Blacks plus Hispanics) ranged from a low of 2.67% to a high of 90.95%; the median was 10.52% suggesting that the distribution of minority examinees enrolled in public institutions is highly skewed. Another indication of skewness was the fact that approximately 92% of the institutions had minority participation rates in the 2.67% to 18.60% range; the remaining three institutions had minority percentages of 34.10%, 67.52% and 90.95%. It is evident that there are only two institutions with minority percentages greater than one-half, one institution at about one-third. All the rest are 18% or less (see Appendix C).

Each distribution of CLAST passing percentages was examined from two perspectives. The first emphasized looking at the shape and range of the distribution; the second attempted to determine whether the percentage of minority students taking CLAST was related to institutional performance. To do the second analysis, the institutions were categorized as having low, medium or high minority percentage. Low minority percentage was defined as having minority first-time examinees ranging from 2.7% to 18.6%. Only one institution was considered to have medium minority percentage--its percentage being 34.1%. High minority percentage was defined as a majority of the test-takers; there were only two public institutions in this category--their percentages being 67.5% and 90.9%. (The distribution of CLAST passing rates was divided into approximately equal thirds in order to see whether minority percentage of examinees was related to performance on a given subtest; the upper and lower thirds of the distribution are denoted by two dashed vertical lines in each figure.)

Mathematics. Figure 3.1 displays the percent of examinees passing the CLAST Mathematics subtest by institution. Institutional passing percentages cover a wide range--from a low of 52% to a high of 96.%. The shape of this distribution suggests at least three reasons for its wide range: (a) the precollege mathematics preparation of these students is low; (b) many of these students have not yet taken college preparatory and college level mathematics courses; or (c) the effectiveness of instruction in the mathematics courses they have taken at the postsecondary level was insufficient to enable them to meet the revised standard of 285 for CLAST Mathematics.

In general, the proportion of minority students in an institution taking CLAST appears to be weakly related to that institution's passing rate on the Mathematics subtest. As can be seen in Figure 3.1, the vast majority of public postsecondary institutions have low minority percentages; there are only two institutions with high minority percentages of CLAST

Figure 3.1 Frequency of Public Institutions Passing CLAST Math by Level of Minority Participation



examinees; both fall into the lowest third of the CLAST Mathematics distribution. The lone institution with a medium percentage of minority examinees is at the lowest step of the middle third of the CLAST Mathematics distribution. What is interesting to note is that low minority institutions overlap all but one of the high minority institutions. In addition, low minority institutions comprise the bulk of the ones whose performance was in the lowest third of the Mathematics distribution--their number being 6 out of 8. This finding suggests that weak preparation in mathematics is a characteristic of all racial and ethnic groups--not just minorities.

Reading. Institutional passing rates on CLAST Reading tended to be clustered toward the upper end of the distribution even though the 1989 standard of 295 was in effect (see Figure 3.2). However, diversity among institutions can still be observed as the lowest passing rate was 57% while the highest was 96%. Approximately two-thirds of the institutions had Reading passing rates of 81% or higher.

As in the case of CLAST Mathematics, the percentage of minority students sitting for the test is a poor predictor of institutional performance in CLAST Reading. Again, the two institutions with high minority percentages performed in the lowest third of the distribution. However, there are five other institutions with low minority percentages falling into the lowest third of the distribution in Figure 3.2, also. An examination of the middle third of the CLAST Reading distribution finds the institution with the medium percentage of minority examinees embedded at the upper end of the middle third of the Reading distribution. The high degree of overlap among institutions with varying percentages of minority examinees shows that low Reading performance is a problem for all racial and ethnic groups. As can be seen in Figure 3.2, of the institutions in the lowest third of the Reading distribution, five of the seven have low minority examinee percentages.

English Language Skills. Over the years, performance on the CLAST English Language Skills subtest has tended to be the highest; it continued to remain high even though the 1989 standard of 295 was in effect. The high level of performance can be noted in the

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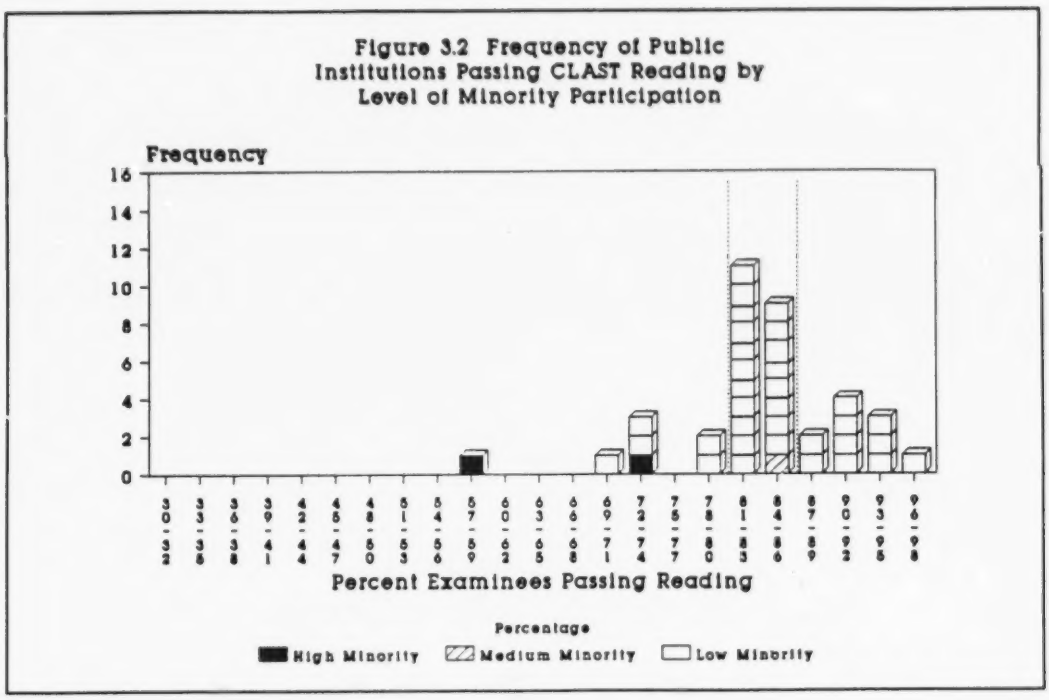

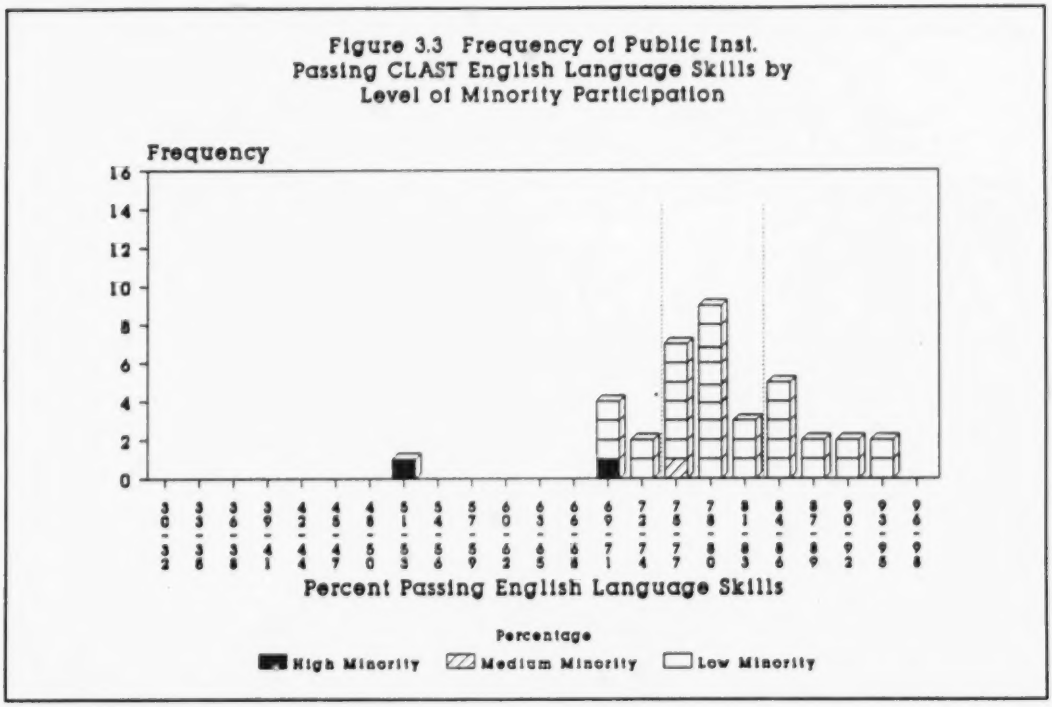

distribution of institutional passing rates (see Figure 3.3). As expected, institutional passing rates tended to cluster at the upper end of the distribution. There is one clear outlier that had the lowest passing percentage of 53%. The highest passing rate was 93% with one university and one community college achieving this level of performance. Of the seven

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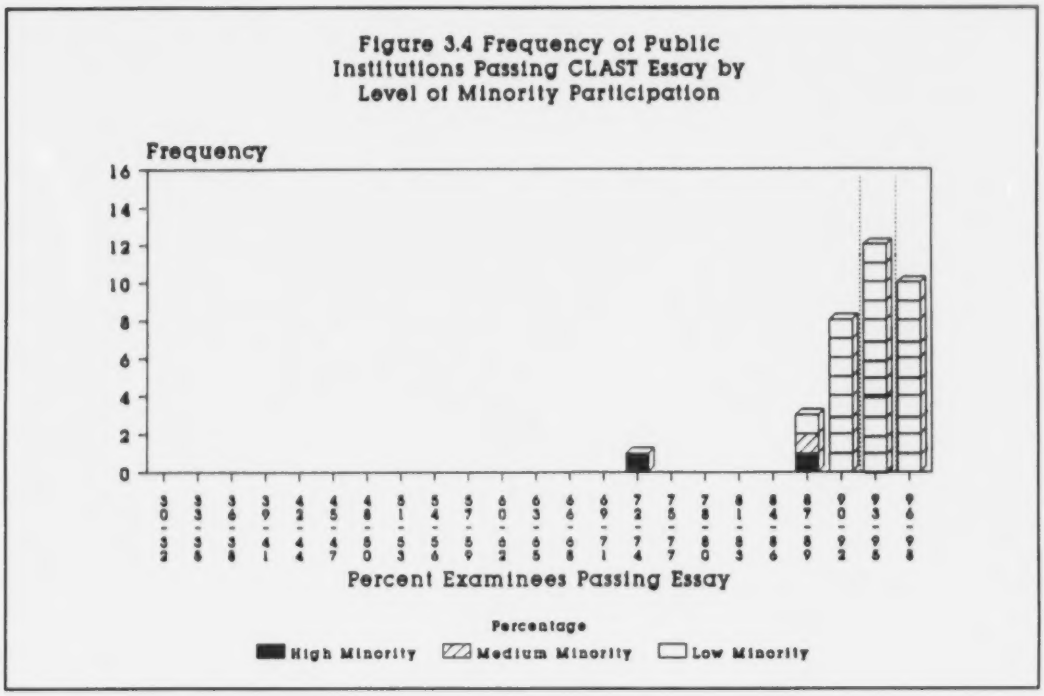
institutions in the lowest third of the distribution, five had low percentages of minority examinees.



Essay. The distribution of institutional passing rates on the CLAST Essay approaches the ideal pattern as the vast majority of institutions fell into the 90% to 98% range (see Figure 3.4). While this is a gratifying result, it should be noted that the passing score was based on the 1986 standard of 4 instead of the 1989 standard of 5. Nonetheless, the observed pattern of passing rates suggests that institutions have been emphasizing student performance in essay writing. As before, there is an outlier institution (74% passing rate) which also had a high percentage of minority examinees.

It is interesting to note that the four lowest institutions in Essay performance were equally divided between universities and community colleges. The percentage of minority examinees at these institutions was: 18%, 34%, 68% and 91%. In this case, lower passing rates on the CLAST Essay appear to be related to percentage of minority participation since these four institutions have the highest minority participation rates although the minority percentage in two of the institutions is less than a 50%.

Since CLAST is based on a criterion-reference approach, students must pass all four subtests in order to meet the college-level academic skills requirement. In light of this, the distribution of passing rates on CLAST as a whole were analyzed also.

Passing Four-of-Four. As noted above, passing rates on the individual subtests tended to be high. However, data displayed in Figure 3.5 shows that many students were unable to pass all four subtests on their first attempt. This is evident in the wide range of institutional percentages with the lowest passing rate being 31% and the highest 87%. The statewide average is 61% passing and is reflected in Figure 3.5 as the most frequently occurring with eight institutions falling in the 60-62 percent passing interval.

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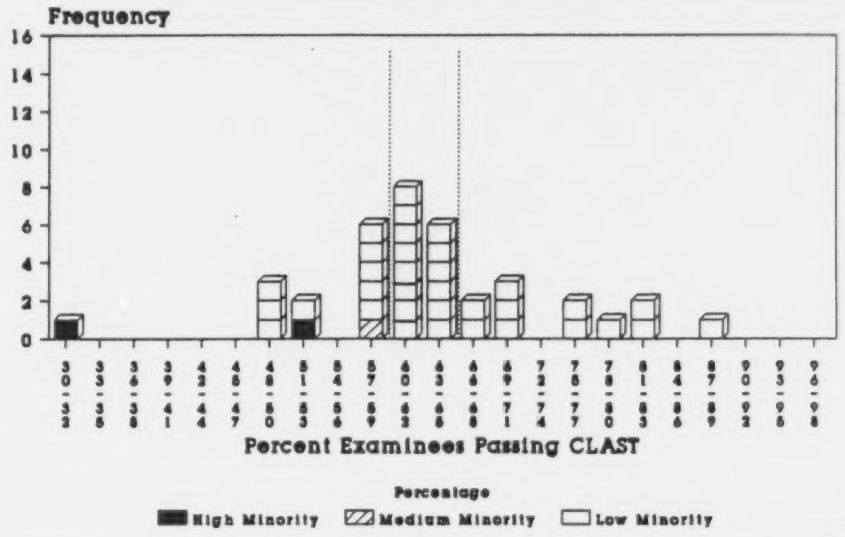
Figure 3.5 Frequency of Public Institutions Passing CLAST by Level of Minority Participation



The lowest third of the distribution based on passing four-out-of-four subtests contained 12 institutions. All three medium and high minority institutions fell into the lower third along with 9 institutions with low minority percentages. It is clear, from these results, that students in institutions with low minority percentages have problems passing four-out-of-four subtests on their first attempt.

The distribution of private college and university passing rates is shown in Figure 3.6. What is striking is the extremely wide range of performance--from a low of 2% to a high of 85% passing four-out-of-four on CLAST. The range for the lowest third of private institutions was from 2% to 35% passing four-out-of-four. The middle third ranged from 36% to 67%, and the upper third ranged from 68% to 87%.

The distribution of percentage minority examinees was also much greater than in public institutions (see Appendix C). Of the 27 private institutions represented in Figure 3.6, five had high minority percentages rates at or greater than 60%. Three were defined as being medium minority--their percentages being 22.2%, 26.6% and 35.7%. The low minority percentages (18.2% or less) appeared to parallel the distribution of minority percentages found in public institutions. While four of the high minority institutions are clustered at the low end of the CLAST distribution, the fifth high minority institution is firmly embedded in the middle of the middle third of the CLAST distribution. As with public postsecondary institutions in the lowest third, there were more low minority percentage than high minority percentage institutions. Just as in the case of public institutions, one can find low minority percentage institutions occurring in all parts of the CLAST distribution.

Discussion of Results

As we look at individual institutional performance, new perceptions emerge. First, there are outlier institutions, i.e., institutions whose performance is distinctly lower than the vast majority of other institutions. Second, when the outlier institutions are examined more closely, we find that some,

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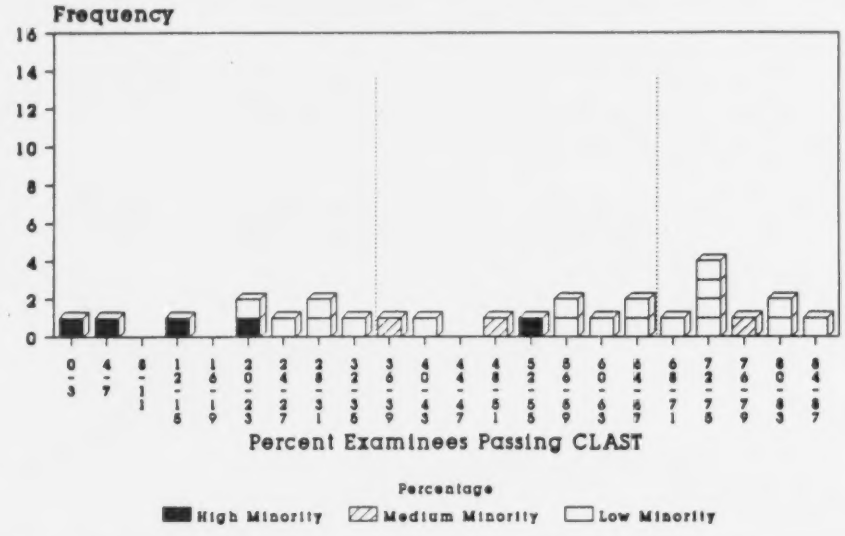
Figure 3.6 Frequency of Private Institutions Passing CLAST by Level of Minority Participation



but not all, have high minority percentages taking CLAST. While disproportional impacts have been noted for minority groups, examination of institutional performance related to the percentage of minority test-takers shows that there are institutions with low minority percentages also doing poorly. One of the most plausible explanations for this is the prior preparation for CLAST which students have received either in high school or in college.

Cultural factors appear to have the greatest impact on essay writing especially for those students for whom English is a second language. Prior preparation in mathematics is also problematic. It appears that students in Florida tend to be under-prepared in this area. While questions may be raised about instructional effectiveness, the deeper issues appear to be related to articulation and expectations. Students must come to realize that completing a degree program in postsecondary education requires meeting the standards for mathematics and communication as measured by CLAST. While the opportunity to acquire these skills exists in secondary and postsecondary institutions, the optimal time to acquire skills in mathematics and communication is in high school. The challenge is to get parents, students and teachers to understand this expectation and act upon it.

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PART 4. TRENDS IN THE PERFORMANCE OF RACIAL AND ETHNIC GROUPS

The performance of minority students has been of concern since the beginning of the College-Level Academic Skills testing program. In 1983, the advisory group responsible for recommending CLAST standards found that minorities would be affected disproportionately based on their performance in October 1982. In light of this finding, the panel recommended implementing the CLAST standards in three gradual increments to give institutions and students time to adjust to the higher expectations.

Concern for minority student access to postsecondary education has raised questions about why they tend to display relatively low performance on standardized achievement tests such as CLAST. How well does minority student CLAST performance compare to the performance of majority students? How well have minority first-time examinees done on CLAST? Has the CLAST served as a deterrent to minority participation in postsecondary education in Florida. The purpose of Part 4 is to present data to answer these questions.

4.1 What has been the trend in performance on CLAST Mathematics for first-time test-takers?

The primary emphasis in Part 4 will be on minority student performance. Trends for White students are displayed in the figures which follow in order to provide a basis for interpreting the performance of minority students.[1]

White Students. As can be seen in Figure 4.1, White students as a whole have consistently performed above the baseline of 300 established in October 1982. White students' Mathematics scores reached a high of 316 in 1987-88 and then declined to 311--the lowest level to date. The number of White first-time test-takers sitting for CLAST has increased continuously ever since the CLAST standards were implemented in August 1984. Beginning with 26,881 in 1984-85, their numbers increased as follows: 26,983 in 1985-86; 27,184 in 1986-87; 33,531 in 1987-88; 38,391 in 1988-89; and 43,734 in 1989-90.

Black Students. Mathematics has been a difficult area for Black students taking CLAST. In 1984-85 their average Mathematics scale score was 287--13 points below the 1982 baseline of 300. As can be seen in Figure 4.1, their performance increased gradually to a high of 293 in 1987-88. However, their mathematics performance has declined during the last two years and is currently at 287--the same level where they began five years ago. Black participation in CLAST also increased over time with one exception--that being 1985-86. Beginning with 2,265 in 1984-85, their numbers were: 2,056 in 1985-86; 2,371 in 1986-87; 3,728 in 1987-88; 5,305 in 1988-89; and 6,513 in 1989-90. Except for the decline in 1985-86, the steady increases in Black participation since 1985-86 suggest that the test has not served as a major deterrent to their enrollment in postsecondary education in Florida.

Hispanic Students. As a group, Hispanic students' Mathematics performance has been above the statewide baseline of 300 for four of the last six years (see Figure 4.1). Beginning with an average of 308 in 1984-85, their performance remained relatively stable until 1988-89 when their average Mathematics score dropped to 300 and then to 292 in 1989-90. Hispanic participation in CLAST has increased steadily over time. Beginning with 2,189 in 1984-85, their numbers increased as follows: 2,345 in 1985-86; 2,426 in 1986-87;

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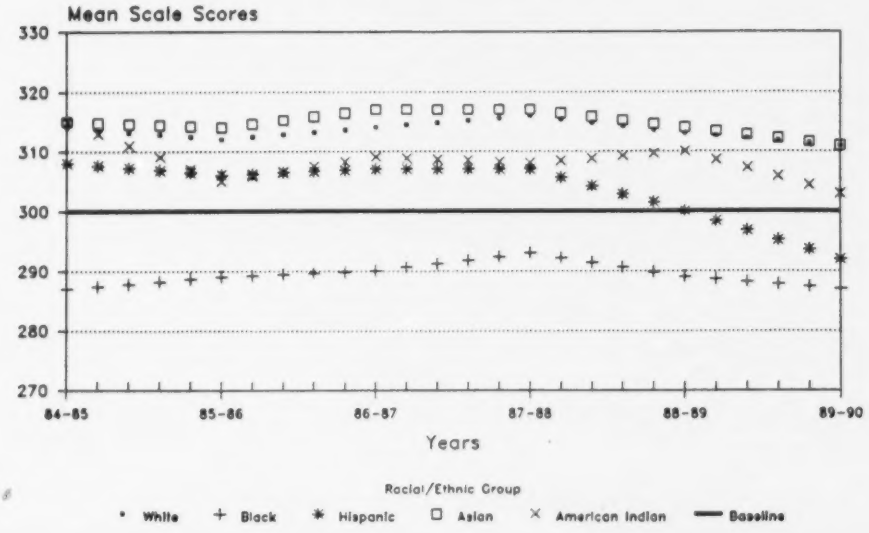
[1] CLAST subtest scores were standardized to have a scale score mean of 300 for the Mathematics, Reading, and English Language Skills subtests and 4.7 for the Essay, based on the October 1982 administration which included 12,393 first-time test-takers from all racial and ethnic groups.

Figure 4.1 Group Trends in CLAST Math
Public Institutions
1984-85 through 1989-90



4,478 in 1987-88; 6,772 in 1988-89; and 8,389 in 1989-90. Why Hispanic student Mathematics performance has dropped recently will be discussed below.

Asian Students. As can be seen in Figure 4.1, the Mathematics performance of Asian students has closely paralleled the performance of White students. Asian student Mathematics performance has consistently remained above a scale score average of 310 for the past six years. However, after reaching a high of 317 in 1986-87 and 1987-88, their performance has begun to decline with their average scale scores being 314 in 1988-89 and 311 in 1989-90. Like other ethnic or racial groups, Asian participation in CLAST has shown an increasing pattern, also. Beginning with only 309 in 1984-85, their numbers increased as follows: 338 in 1985-86; 412 in 1986-87; 1,024 in 1987-88; 1,477 in 1988-89; and 1,656 in 1989-90.

American Indian Students. American Indian first-time examinees have had the most variable pattern of performance on CLAST Mathematics while remaining above the statewide baseline of 300 (see Figure 4.1). Beginning with a scale score average of 315 in 1984-85, their performance dropped to 305 in 1985-86 only to rise again to 309 in 1986-87. After a one-point drop in 1987-88, they increased to 310 in 1988-89 but then dropped to an all-time low of 303 in 1989-90. The number of American Indian students taking CLAST has been relatively small. Beginning with only 88 in 1984-85, their numbers have displayed the following pattern: 85 in 1985-86; 73 in 1986-87; 71 in 1987-88; 97 in 1988-89; and 146 in 1989-90.

4.2 What has been the trend in performance on CLAST Reading for first-time test-takers?

Language and cultural differences emerge when CLAST Reading performance is analyzed. Reading performance has been relatively high for virtually all racial and ethnic groups taking CLAST (see Figure 4.2).

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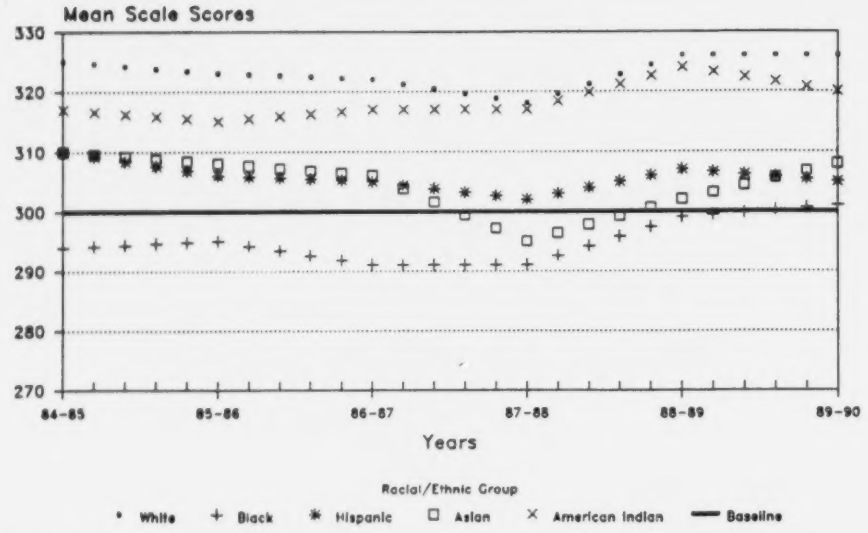
Figure 4.2 Group Trends in CLAST Reading
Public Institutions
1984-85 through 1989-90



White Students. White first-time test-takers have done consistently well in CLAST Reading performance. As can be seen in Figure 4.2, White student performance has been maintained at or above a Reading scale score mean of 322. The only exception to this is 1987-88 when their performance dropped to a scale score average of 318. For the past two years Whites' Reading performance has been maintained at the all-time high of 326.

Black Students. While Black students' Reading performance began below the statewide baseline of 300, their Reading scores have increased during the past two years such that their group average was 301 in 1989-90. It seems clear that Black student reading performance has been disproportionately low when compared to the performance of White and American Indian students although the size of the differences appears to be diminishing (see Figure 4.2).

Hispanic Students. The Reading performance of Hispanic students has been maintained above the baseline of 300 for the past six years (see Figure 4.2). Beginning with a Reading average of 310 in 1984-85, their performance declined gradually to an all-time low of 302 in 1987-88. Their Reading performance improved to 307 the next year but then dropped to 305 in 1989-90. Hispanic students appear to be disproportionately affected in Reading but not to the extent that Black students are. Hispanic students appear to do relatively well although their group performance is still below that of majority group students. This is encouraging because English is not the native language for many of them.

Asian Students. The reading trends for Asian students parallel trends in reading for Hispanic students. As can be seen in Figure 4.2, Asian students had a Reading scale score average of 310 in 1984-85--the same as Hispanic students. However, as the number of Asian test-takers increased, their Reading performance decreased until it reached an all-time low of 295 in 1987-88 as their number increased from a beginning 309 test-takers in 1984-85 to 1,024 in 1987-88. But then a surprising thing happened. The number of Asian test-takers continued to increase as did their Reading performance--to 302 in 1988-89 and 308 in 1989-

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90. That Asians do as well as they do in Reading is encouraging because English may not be the native language of many of them.

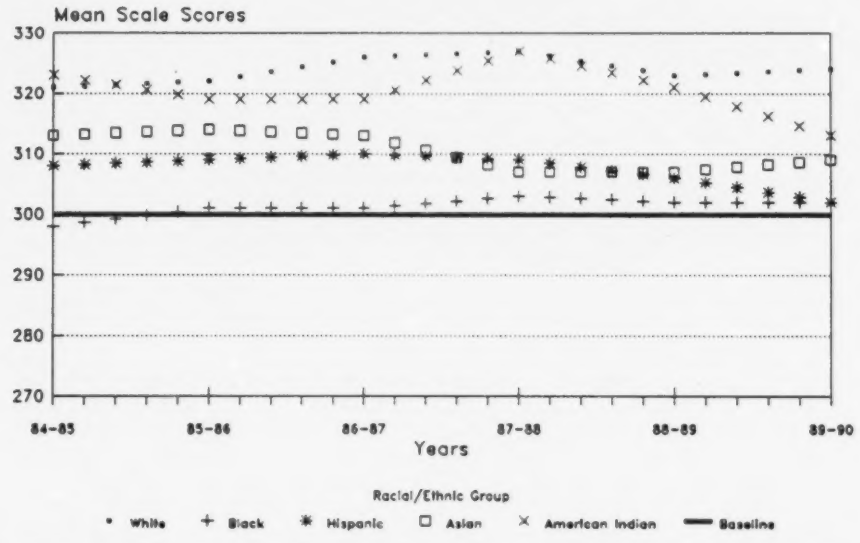
American Indian Students. American Indian students' Reading performance is second highest among the racial or ethnic groups. Their performance parallels the performance of White students as the Indian students' Reading scale score averages have been maintained at or near 320. Their best two years were 1988-89 and 1989-90 when their Reading averages were 324 and 320, respectively. Their lowest performance was 315 in 1985-86 with 85 test-takers. In 1988-89 their performance was 325. It is interesting to note that America Indians are the only ones who experienced a decline in Reading scores from 1988-89 to 1989-90.

4.3 What has been the trend in performance on CLAST English Language Skills for first-time test-takers?

English Language Skills have been one of the highest areas of performance on CLAST. Ethnic or racial group averages on the English Language Skills subtest have been maintained above the statewide baseline of 300 with only one exception.

White Students. As can be seen in Figure 4.3, White student performance has been consistently above a scale score average of 320. Their lowest year was 1984-85 when their average scale score was 321. Since that time, White student performance has varied between 322 and 327 with performance in 1989-90 being 324.

Figure 4.3 Group Trends in CLAST English Language Skills, Public Institutions 1984-85 through 1989-90



Black Students. Black student performance in English Language Skills has been above the statewide baseline of 300 since 1985-86. However, their performance has been stable varying between 301 and 303 over the past four years (see Figure 4.3). Disproportionate impacts can be observed when Black English Language Skill performance is compared to White student performance.

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Hispanic Students. Disproportionate impacts for English Language Skills can also be observed for Hispanic students (see Figure 4.3). Their English Language Skill performance has been maintained above the statewide baseline of 300 although there has been a decline during the past four years. Beginning with an average of 308 in 1984-85, Hispanic student performance increased to an all-time high of 310 in 1986-87 but has gradually declined to an all-time low of 302 in 1989-90. The declines noted after 1986-87 could be accounted for by larger numbers of Hispanic students taking CLAST earlier to be covered by the lower standards in effect prior to August 1989.

Asian Students. Asian student performance on English Language Skills has been interesting in that they initially started out high but declined slightly over time. Their performance has consistently been above the statewide baseline of 300 (see Figure 4.3). They reached their all-time high of 314 in 1985-86 but have been on a gradual decline to 307 in 1988-89. Their performance increased to 309 in 1989-90.

American Indian Students. American Indian students began on a par with White students in 1984-85 with an English Language Skills average score of 323. Their performance has varied since that time with their all-time high of 327 being reached in 1987-88. This was followed by a drop to 321 in 1988-89, followed by another drop to their all-time low of 313. The decline noted here was the most severe of all groups in spite of the fact that English Language Skills has been among the easiest CLAST subtests.

4.4 What has been the trend in performance on CLAST Essay for first-time test-takers?

There is a great deal of variability in CLAST Essay performance among the racial and ethnic groups. The CLAST Essay appears to be one of the most challenging subtests--especially for minority students.

White Students. As can be seen in Figure 4.4, White student performance has been relatively high and stable over time. Their scale score averages have varied between 5.2 and 5.3 for the past six years; average scores of 5.2 and 5.3 are substantially above the statewide baseline of 4.7.

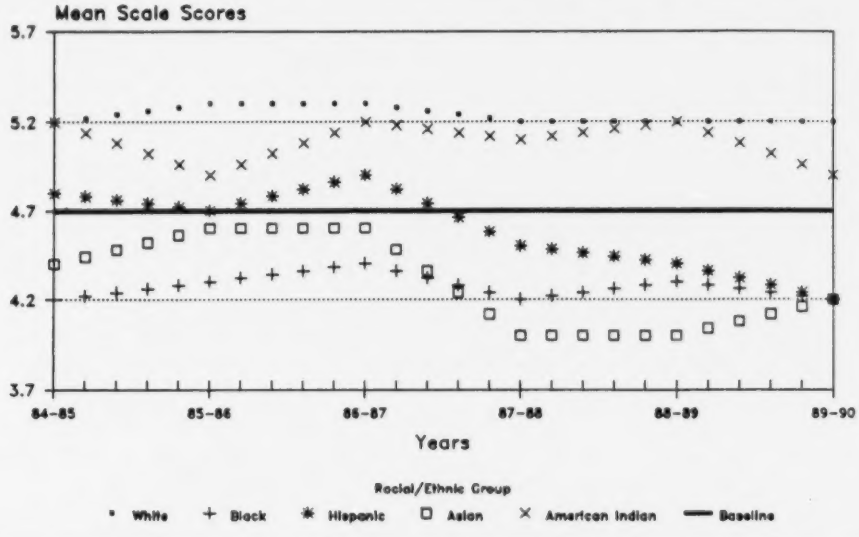
Black Students. As before, substantial disproportionate effects are evident when Black student performance is compared with White student performance. As can be seen in Figure 4.4, Black student Essay performance has consistently been below the statewide baseline of 4.7. Their performance on Essay has been relatively stable, varying between 4.2 and 4.3 with performance in 1989-90 being 4.2.

Hispanic Students. After a relatively high beginning, Hispanic Essay performance has been in decline during the past three years. Beginning with an average of 4.8 in 1984-85, Hispanic students went on to reach their all-time high of 4.9 in 1986-87. Since that time they have declined in each of the last three years to an Essay average of 4.2 in 1989-90. The average of 4.2 is well below the statewide average established in 1982.

Asian Students. Asian students appear to be having difficulty with the CLAST Essay subtest. Their performance has been consistently below the statewide baseline of 4.7. While they showed improvement in Essay performance between 1984-85 and 1986-87, they dropped to averages of 4.0 in 1987-88 and 1988-89. In 1989-90 they improved to an Essay scale score average of 4.2--which is still substantially below the 1982 baseline.

American Indian Students. The Essay writing performance of American Indian students has been relatively high and has paralleled the level of performance of White students at several points in time. American Indian students had declines in CLAST Essay performance in

Figure 4.4 Group Trends in CLAST Essay
Public Institutions
1984–85 through 1989–90



1985-86 and in 1989-90 when their performance dropped to a scale score average of 4.9. During the other years their performance was stable within the 5.1 to 5.2 scale score range. What is of concern is the decline to 4.9 noted in 1989-90. While higher than the baseline average of 4.7, this result parallels declines displayed by Hispanic and Black students.

Discussion

Two concerns of Part 4 were: (a) whether there are disproportionate impacts on minority first-time examinees, and (b) whether CLAST has been a deterrent to minority participation in postsecondary education in Florida. There appear to be disproportionate impacts; they are the largest for Mathematics and Essay. The disproportionate impact of CLAST Mathematics is most evident for Black students as their scale score average has consistently been below the baseline of 300. While Hispanic students' Mathematics performance began at a relatively high level in 1984-85, their performance has declined over the past three years and is currently below the baseline of 300. The performance of Asians and American Indians remains close to that of the White majority. Surprisingly, all groups have shown declines since 1988-89. The most plausible reason for this appears to be related to the large numbers of students who chose to take CLAST earlier in their college careers in order to be covered by the 1986 or the revised 1989 standards. This is evident when one examines the larger-than-expected increases in the number of students sitting for CLAST in 1988-89 and 1989-90.

While the performance of all racial or ethnic groups tends to be high in CLAST Reading, disproportional impacts are still evident. There is a relatively large disparity between White test-takers' and Black test-takers' performance. While Mathematics scores tended to decline for all groups during the past two years, the different groups' Reading performance tended to remain high or to improve slightly. Reading tended to be one of the higher areas of performance on CLAST. Students appeared to be relatively well-prepared to compete effectively against the 1989 Reading standard of 295.

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While the performance of all racial or ethnic groups tends to be high in English Language Skills, disproportional impacts are still evident. There is a relatively large disparity between White test-takers' and Black test-takers' performance. The different groups' English Language Skill performance tended to remain high during the past two years although slight declines were noted recently for Hispanic and for American Indian students. English Language Skills tends to be one of the higher areas of performance on CLAST. Students appear to be relatively well-prepared to compete effectively against the 1989 English Language Skill standard of 295.

There appears to be real cause for concern regarding students' ability to meet the 1991 CLAST Essay standard of 5. As can be seen in Figure 4.4, there have been declines in the performance of all groups except Whites. More significantly, in 1989-90 Black, Hispanic and Asian students had an average Essay score of 4.2 which is substantially below the statewide baseline of 4.7.

The second issue addressed in Part 4 is whether CLAST has served as a deterrent to minority student participation in postsecondary education in Florida. An analysis of the numbers of students sitting for CLAST by racial or ethnic group reveals that with the exception of a single year, the number of students sitting for CLAST has increased over time; the number has increased substantially during the last two years. In addition, data presented by the Postsecondary Education Planning Commission (1991) shows a similar pattern. In this study it was found that enrollments for Blacks and Hispanics reached a low in 1985-86 and have been increasing each year to the present. It seems reasonable to conclude that CLAST has <u>not</u> been a deterrent to college-level participation by minority group students.

4.5 Are the college-preparatory instructional needs of minority students being met by Florida's public community colleges and universities?

There are two ways to answer this question. One way would be to look at the first-time test-taking performance of minority students. The other way would be to see what happens to the performance of minority students over time. Data in Figures 4.1 through 4.4 shows the performance of minority first-time examinees following the first approach. The primary statistic in these figures was the group average and it served as a useful indicator regarding trends for first-time examinees. However, since students may retake failed subtests, trends based on first-time test-takers says little about what happens to students after they fail a CLAST subtest.

That there are substantial numbers of students in need of college preparatory instruction was established in Part 1 based on the results of entry level testing. It was found that almost half of Florida's students matriculating in a community college scored below the cut-off score on an approved mathematics placement test. The situation was <u>not</u> as severe in writing or reading as approximately one-fourth of first-time-in-college freshmen scored below the cut-off score on an approved writing or reading placement test. These results suggest that there are large numbers of students whose college preparatory instructional needs are <u>not</u> being met at the high school level. What of their instructional needs in college?

This question is difficult to answer with the data at hand because many students took CLAST earlier so that they would be covered by lower standards. An attempt was made to determine how many college-level credit hours these first-time examinees had taken. It must be noted that the number of credit hours which students had taken was based on self-report. So there is no way to check the accuracy of that data or which particular courses the over- or under-60 hours represented. These results were presented in Part 3 where it was found that students in state universities with under 60-hours did better than their counterparts with over 60-hours (79% versus 72% passing four-out-of-four). The reverse was true for community college students as those with over 60-hours performed better than their counterparts with under 60-hours (61% versus 46% passing four-out-of-four). There was less difference among private college students as those with over 60-hours did slightly better than those with under 60-hours (54% versus 51% passing four-out-of-four).

One other way to answer Question 4.5 is to see how well students do when they retake failed subtests. Results presented in Part 5 describe how well members of racial or ethnic groups performed upon retaking CLAST. As Part 5 will show, students who retake failed subtests do pass. Whether the instructional or advising processes are as effective or efficient as they should be remains open to question, however. There is no way to answer this question definitively with the data in hand.

Reference

Postsecondary Education Planning Commission. (1991). Student Access to Higher Education. Tallahassee, FL: Author.

PART 5. RESULTS OF COHORT FOLLOW-UP STUDIES

While the Standing Committee's previous reports have tended to emphasize results based on first-time examinees, this (and future) reports will place emphasis on the results of cohort follow-up studies. There are at least two reasons for doing so. First, students have been able to take the CLAST earlier in their college careers[1]. However, many are not well prepared and therefore fail one or more subtests. Second, emphasizing longitudinal cohort results makes student welfare more salient. While the performance of first-time examinees may be interesting in terms of efficiency, the more critical issue is whether college students who lack skills in communication and mathematics acquire them. Monitoring students who fail CLAST is one way of determining how effective institutions are in providing academic support for students who have been admitted with deficiencies in one or more of the college-level skills in communication or mathematics.

5.1 Do students who fail CLAST retake it? If so, are they successful?

Students do retake and pass failed subtests. For example, in October 1989, 65.2% of the 18,814 students who took CLAST passed it on their first attempt (see Table 5.1). An additional 2,631 students successfully passed failed subtests (an increase of 14.1%) for a total of 79.3% meeting the revised 1989 standards after two subsequent administrations.

Table 5.1

Cumulative Percent Passing after Indicated Administration
1989 Standards, October 1989 Cohort
All Examinees

Subtest	October 1989	March 1990	June 1990	Increase
Essay	91.0	93.9	94.8	+ 3.8
English Language Skills	80.2	85.7	88.2	+ 8.0
Reading	85.9	90.4	91.5	+ 5.6
Mathematics	80.8	85.8	87.9	+ 7.1
Three of Four Subtests	83.3	87.3	88.9	+ 5.6
All Four Subtests	65.2	75.3	79.3	+14.1
Number in Cohort	18,814	18,778	18,777	

As can be seen in Table 5.1, initial passing rates on individual subtests for the October 1989 cohort are relatively high. The initial passing rates for all examinees on the subtests were: 80.8% for Mathematics, 85.9% for Reading, 80.2% for English Language Skills, and 91.0% for Essay. After two more administrations of CLAST, the passing rates for students in the

[1] Taking CLAST at entry is no longer allowed. The 1990 Florida legislature enacted a law which requires students to complete 18 credit hours of college level work before they can sit for CLAST.

October 1989 cohort have increased to: 87.9% for Mathematics, 91.5% for Reading, 88.2% for English Language Skills, and 94.8% for Essay.

According to State Board of Education administrative rules, students who have passed three CLAST subtests may enroll for up to 36 credit hours of upper division course work. As can be seen in Table 5.1, 83.3% of the October 1989 cohort passed three subtests and were therefore eligible to enroll for upper division classes. By June 1990, the percentage passing three of four subtests had increased to 88.9%.

Even though the revised 1989 standards are higher, it seems reasonable to conclude that students who fail but continue to try are able to master the college-level skills in communications and mathematics. The kind of institutional support they receive and the quality of students' personal efforts play an important role in whether they ultimately pass CLAST.

5.2 Given the opportunity to retake failed subtests, are any racial or ethnic groups disproportionately affected by the revised 1989 CLAST standards?

White Examinees. White examinees comprise the vast majority of test-takers in the October 1989 cohort, i.e., 13,330 (or 71%) out of 18,814.

Table 5.2

Cumulative Percent Passing after Indicated Administration
1989 Standards, October 1989 Cohort
White Examinees

Subtest	October 1989	March 1990	June 1990	Increase
Essay	96.3	98.2	98.5	+ 2.2
English Language Skills	86.7	91.2	93.2	+ 6.5
Reading	92.2	95.6	96.3	+ 4.1
Mathematics	86.7	91.0	92.6	+ 5.9
Three of Four Subtests	90.9	94.0	95.0	+ 4.1
All Four Subtests	74.5	83.7	87.1	+12.6
Number in Cohort	13,330	13,309	13,308	

As can be seen in Table 5.2, 74.5% of the White examinees in the October 1989 cohort passed CLAST on their first try. Two administrations later, 87.1% had passed CLAST for an increase of 12.6 percentage points. Their best area of performance was on the Essay where 96.3% passed initially; two administrations later 98.5% had passed the Essay. Reading was the next best area of performance as 92.2% passed on the first try; two administrations later 96.3% had passed the Reading subtest. English Language Skills and Mathematics were relatively difficult areas for White examinees as only 86.7% passed on their first attempt. Two administrations later, their performance improved to 93.2% and 92.6% pass, respectively, for these subtests.

Table 5.3

Cumulative Percent Passing after Indicated Administration
1989 Standards, October 1989 Cohort
Black Examinees

Subtest	October 1989	March 1990	June 1990	Increase
Essay	81.5	87.0	88.6	+ 7.1
English Language Skills	64.0	71.3	74.7	+10.7
Reading	68.0	76.1	77.8	+ 9.8
Mathematics	61.7	68.6	71.3	+ 9.6
Three of Four Subtests	63.1	70.9	73.6	+10.5
All Four Subtests	41.3	53.2	57.6	+16.3
Number in Cohort	2,076	2,072	2,072	

Black Examinees. As the following results will show, disproportional impacts can be observed for minority group examinees who are first-time test-takers. The disproportional effect is greater under the revised 1989 standards than the 1986 standards. As can be seen in Table 5.3, less than half (i.e., 41.3%) of the Black first-time examinees passed all four subtests compared to 74.5% of the White examinees (see Table 5.2). When gains are compared, however, an additional 16.3% of the Black examinees had passed four-out-of-four subtests two administrations later as compared to a gain of 12.6% for White examinees.

Mathematics appears to be the most difficult area for the Black students in this cohort as only 61.7% passed on their first attempt. Two administrations later, a total of 71.3% had passed--a gain of 9.6 percentage points. Gains were noted in other subtest areas as well: from 81.5% to 88.6% for Essay, from 64.0% to 74.7% for English Language Skills, and 68.0% to 77.8% for Reading.

Hispanic Examinees. The pattern of results for Hispanic examinees in the October 1989 cohort closely approximates results observed for Black examinees. As can be seen in Table 5.4, disproportional impacts are evident when Hispanic performance is compared to the performance of the majority group (see Table 5.2).

Less than half of the Hispanic examinees (41.8%) in the October 1989 cohort passed four-out-of-four subtests on the first try as compared to 74.5% pass for White students. After two administrations, 59.5% of the Hispanics had passed four-out-of-four for a gain of 17.7 percentage points. This is similar to gains made by the October 1989 Black cohort.

English Language Skills and Mathematics appear to be the most difficult areas for the Hispanic students in this cohort as only 63.9% and 64.9% passed these subtests on their first attempt. Two administrations later, a total of 75.2% and 75.0% had passed both subtests--a gain of 11.3 and 10.1 percentage points, respectively. Gains were noted in other areas as well: from 78.1% to 84.7% for Essay, and 72.6% to 80.6% for Reading.

Table 5.4

Cumulative Percent Passing after Indicated Administration
1989 Standards, October 1989 Cohort
Hispanic Examinees

Subtest	October 1989	March 1990	June 1990	Increase
Essay	78.1	83.8	84.7	+ 6.6
English Language Skills	63.9	71.9	75.2	+11.3
Reading	72.6	78.5	80.6	+ 8.0
Mathematics	64.9	71.3	75.0	+10.1
Three of Four Subtests	65.2	70.2	73.3	+ 8.1
All Four Subtests	41.8	53.9	59.5	+17.7
Number in Cohort	2,346	2,340	2,339	

Conclusion

While minority examinees experience disproportionately high failure rates the first time they take CLAST, those who fail are able to increase their performance level significantly upon retaking failed subtests. As a matter of fact, minority students show greater gains than majority students upon retaking CLAST. For example, Blacks showed a gain of 16.3 percentage points in passing four-out-of-four subtests; Hispanics showed a gain of 17.7 percentage points as compared to a gain of 12.6 percentage points for white examinees.

One other point is worth repeating. Since CLAST is a criterion-referenced test, students must pass four-out-of-four subtests. The data presented in Part 5 show that while large numbers of students are able to demonstrate acceptable levels of proficiency in one, two, or three skill areas, they still have deficiencies in either communication or mathematics. The criterion-referenced nature of CLAST ensures that all students must demonstrate acceptable levels on all of the skills in communication and mathematics if they are to receive an associate of arts degree or progress to the upper division. CLAST test results, if used appropriately, enable identifying students whose skills are lacking. Then, it is up to the students and the faculty to work together to achieve mastery of the college-level skills.

PART 6. IMPLICATIONS OF CURRENT STUDENT PERFORMANCE REGARDING ACHIEVEMENT OF THE REVISED 1989 CLAST STANDARDS

When CLAST cutoff scores were established, three sets of standards were adopted. The standards were implemented in three stages. According to the state level committee which recommended them, the first standards that went into effect in August 1984 represented the level where most students were performing at that time. Realizing that it would take time to align curriculum and instruction, the state level committee recommended raising the cutoff scores in two increments. The first increase took effect in August 1986 and reached one-third of the way between the 1984 and the 1989 standards. The 1989 standards represented the desired level of performance expected of all students receiving the Associate of Arts degree or of university students progressing to the upper division. In August, 1989, the State Board of Education affirmed the 1989 standards with two modifications: the Mathematics passing score was raised from 275 to 285 instead of to 295; the Essay cut-off score remained at 4 instead of 5. The passing scores for Reading and English Language Skills were placed in effect at the 1989 level of 295.

The purpose of Part 6 is to describe and discuss the implications of current student performance in light of the revised 1989 standards.

6.1 How were public and private postsecondary institutions affected by the revised 1989 standards?

Table 6.1

Percent of 1989-90 First-Time Examinees Meeting the Revised 1989 Standards and Number Who Will Need to Retake One or More Subtests
All Examinees for Public and Private Community Colleges and Universities

Institutional Group	Number Tested (All Subtests)	Percent Meeting 1989 Standards	Approximate* No. of Retakers
Public Community College Students	40,784	52%	19,576
SUS University Students	21,426	76%	5,142
Private College Students	5,859	52%	2,812

* These calculated totals are approximate due to the use of rounded percentages.

The revised 1989 standards had the greatest impact on public community colleges and private colleges and universities (see Table 6.1). Slightly over half (52%) of the examinees in these institutions passed four-out-of-four CLAST subtests on their first try. SUS university examinees fared substantially better as 76% of them satisfied all CLAST standards on their first attempt.

Not all who failed will need remediation, however. There was a substantial increase in the number of students sitting for CLAST in 1989-90. This increase can be explained in terms

of at least three factors: (a) freshmen were allowed to take CLAST on demand;[1] (b) students are held to the standards that were in effect the first time they took CLAST; (c) increases in passing scores for Mathematics, Reading and English Language Skills. Many students appear to be taking CLAST sooner than they normally would in order to be evaluated under the revised 1989 standards which require only a score of 4 on the Essay. For these reasons, it is not clear how many of the approximately 24,425 examinees in public colleges and universities who failed under the revised 1989 standards will need remedial instruction (see Table 6.2). For example, some freshmen who failed have yet to take mathematics and communication courses required under the Gordon Rule. Therefore, their skill levels will increase as they continue their program of studies without recourse to remedial instruction. It should be clear, though, that substantial numbers will require some form of effective remediation.

6.2 How many first-time examinees will have to retake one or more CLAST subtests?

Table 6.2

Percent of 1989-90 First-Time Examinees Meeting the Revised 1989 Standards and Number Who Will Need to Retake CLAST, All Examinees and by Racial or Ethnic Group Public Colleges and Universities

Racial/Ethnic Group	Number Tested (All Subtests)	Percent Meeting 1989 Standards	Approximate* No. of Retakers
All Examinees	62,210	61%	24,425
Whites	43,734	71%	12,683
Blacks	6,567	33%	4,400
Hispanics	8,389	37%	5,285
American Indian	146	55%	66
Other, Including Foreign Nationals	3,374	41%	1,991

* These calculated totals are approximate due to the use of rounded percentages.

In 1989-90, 48% of the community college and private college students and 24% of the university students will need to retake CLAST because they failed one or more of the subtests. As can be seen in Table 6.1, the numbers of students who will need to retake one or more subtests are 19,576 from community colleges, 5,142 from SUS universities, and 2,812 from private colleges.

[1] This is no longer allowed. The 1990 Florida legislature enacted a law which requires students to have completed 18 credit hours of college-level work before they can sit for CLAST.

6.3 How were racial or ethnic groups affected by the revised 1989 standards when they took CLAST for the first time?

Whites. While White students have the highest passing rate (71%) with the revised 1989 standards in effect, they also comprise the largest number who failed CLAST subtests. As can be seen in Table 6.2, approximately 12,683 Whites will need to retake one or more subtests. Even though White students have the highest passing rate, more of them will need to retake CLAST because there are so many more of them in college.

Blacks. While Blacks have the lowest passing rate (33%), 4,400 of them will have to retake failed subtests. It is clear that the 1989 standards have a disproportional impact on Black students. However, the number of Black students (4,400) who will need to retake failed subtests is only about one-third the number of Whites (12,683) who will also have to retake them.

Hispanics. The passing rate for Hispanics is 37%; 5,285 of them will need to retake the test or seek remediation after their first attempt. Again we see a disproportional impact while noting that the number who will have to retake a subtest is less than half the number of non-minority students (12,683) who will also retake one or more subtests.

American Indians. The passing rate for American Indians was 55%. The number of American Indians having to retake CLAST is approximately 66.

Other, Including Foreign Nationals. Not surprisingly, the passing rate for Other, Including Foreign Nationals, is relatively low at 41%. Approximately 1,991 of them need to retake subtests.

6.4 What is the impact of the revised 1989 standards on postsecondary institutions' academic support resources?

It would be preferable to avoid having to provide remedial instruction by having students acquire the CLAST skills either in high school or in their mathematics and writing courses in college. It must also be acknowledged that students fail to acquire skills for a variety of reasons. These reasons could include: (a) lack of access to appropriate curriculum or instruction, (b) lack of ability, (c) lack of motivation, (d) lack of prior knowledge, or (e) lack of study skills. It should be clear that different kinds of approaches will be required because of differences among the learners involved. Given the results of research on increasing the achievement of at-risk students, it would be a mistake to assume that remedial instruction will be the most effective solution to student failure on CLAST (cf. Kulik, Kulik & Shwalb, 1983).

Because students will fail CLAST for a variety of reasons, it is difficult to estimate the magnitude of impact on each of the kinds of academic support services offered by institutions. Making good decisions will depend on effective diagnosis and student advisement. Faculty in postsecondary institutions will need to figure out effective ways to diagnose and assist failing students to acquire the college-level skills in communication and mathematics. How this might be done is addressed in Part 7 of this report.

6.5 Are the revised 1989 standards too high?

The revised 1989 standards were raised gradually to give institutions more time to adjust curriculum and instruction. While the revised standards are substantially higher than the 1986 standards, the revised 1989 standards are by no means elitist. A careful examination of CLAST item content will show that most of it is based on subject matter that is typically taught in college preparatory classes

in high school. Those items not taught in high school, e.g., statistics and logic, are clearly appropriate for lower division instruction in communication and mathematics. Why students fail to master CLAST skills is hard to comprehend--unless they have not been taught these skills.

Is meeting the 1989 standards a hopeless task? No! Because data presented in Part 5 of this report show that students who prepared and retook CLAST subtests did pass them on subsequent attempts. With appropriate encouragement, academic guidance, and instructional support, there is no reason why students who are motivated should not be able to meet the 1989 standards on either their first or second try. They can pass CLAST, but they will need help of the kinds suggested above by Kulik, Kulik, & Shwalb (1983).

6.6 Have Florida's public postsecondary institutions taken steps to use CLAST subtest item data to improve their curriculum and instruction?

The State Board of Education requested that each postsecondary institution submit a plan describing what it was doing to help students acquire the college-level skills in communication and mathematics. These plans were due in May 1990. A summary of the plans is presented in Part 7.

The purpose of the next section is to describe procedures and institutional efforts which appear to be associated with acquiring the college-level skills in communication and mathematics.

Reference

Kulik, C-L, Kulik, J. A. & Shwalb, B. J. (1983). College Programs for High-risk and Disadvantaged Students: A Meta-Analysis of Findings. Review of Educational Research, 53(3), 397-414.

PART 7. PROCEDURES AND INSTITUTIONAL PRACTICES TO ENHANCE STUDENT PERFORMANCE ON CLAST

CLAST data can be used to identify the strengths and weaknesses of both students' and the institution's curriculum and instruction in communication and mathematics. CLAST printouts and data tapes are routinely provided to each postsecondary institution. One of the ongoing challenges for institutional personnel is how to use CLAST data as a tool to improve student learning. While some institutions have made good use of CLAST data to identify gaps in student performance, others have not.

7.1 For which CLAST subtests are difficulties likely to be encountered?

Results reported in Part 6 suggest that large numbers of students will have to retake CLAST now that the revised 1989 standards are in effect. Question 7.1 is an important question because answers to it can identify the areas where learning problems are likely to occur.

Mathematics. There is substantial evidence to suggest that passing the mathematics requirement will be an area of difficulty for many students in Florida. There are multiple sources of evidence to support this concern. For example, the results of entry testing show that the percentage of community college students scoring below cut-off scores on approved mathematics placement tests has been at about the 50% level (see Table 1.1). While there has been slight improvement in placement testing results (from 51% to 48%) over the past three years, this amount is hardly enough to encourage much optimism regarding performance on CLAST. In addition, there appears to be a decline in students' performance in CLAST Mathematics scores (see Figure 4.1). While these scale score declines can be explained by more students taking CLAST earlier before taking required courses in college-level mathematics, the fact is that the Mathematics standard was increased to 285. The number passing the Mathematics subtest is likely to continue to decline when the cut-off score is raised to 295 in August 1991. Private college students will probably have more difficulty than community college students--their 1989-90 passing rate being only 63% (see Table 3.1). University students appear to do better; their 1989-90 Mathematics passing rate was 89% (see Table 3.1). It is likely to decline when the standard becomes 295 in August 1991.

What accounts for the large number of failures in CLAST Mathematics? A study by Nickens (1989) addressed this question. He analyzed transcripts of students who had failed CLAST after repeated attempts. Nickens found that of the 392 in the study sample, only 174 (44%) took courses in pre-Algebra or higher in high school (see Table 7.1).

Data found in Table 7.1 looks encouraging as the group of 174 students took courses in Algebra I, Algebra II and Geometry. So why did these students repeatedly fail CLAST Mathematics? Data presented in Table 7.2 show the grades which the 174 students received in their high school mathematics courses.

These data show that 84% of the students earned Cs or Ds in their high school mathematics courses. Even earning an A or a B did not provide the basis for passing CLAST Mathematics. It seems clear that a major reason for low performance on CLAST Mathematics is either lack of preparatory instruction or low levels of achievement in high school mathematics courses, with the low levels not being sufficient to demonstrate mastery of the CLAST skills in mathematics.

Reading. Reading tends to be one of the higher areas of CLAST performance with 91% of the university students were able to pass the 1989 standards on their first attempt (see

Table 7.1

Highest Level High School Mathematics Course Taken
by Students Who Repeatedly Failed the CLAST Mathematics Subtest

	White	Black	Hispanic	Other	Total
Gen. Math Pre Algebra	19%	35%	36%	50%	31%
Algebra I	29%	26%		17%	25%
Algebra II Geometry	50%	38%	64%	33%	43%
Trigonometry	2%	2%			2%
Count	48	109	11	6	174

Table 7.2

Average High School Mathematics Course Grade Earned
by Students Who Repeatedly Failed the CLAST Mathematics Subtest

	White	Black	Hispanic	Other	Total
D	33%	29%	27%	17%	30%
C	50%	57%	55%	17%	54%
B	15%	11%	18%	50%	14%
A	2%	3%		17%	3%
Count	48	108	11	6	173

Table 3.1). Community college and private college students performance is substantially lower as their 1989-90 passing rates were 76% and 75%, respectively, and are based on a cut-off score of 295 which is the ultimate standard. While some students may have difficulty passing the Reading standard, it will not pose as a large a problem as passing the Mathematics or Essay standards.

English Language Skills. Performance on the English Language Skills subtest has tended to increase or stay relatively high since the inception of CLAST. Therefore, it would not be surprising if state-wide performance in English Language Skills would continue to be relatively high even against the 1989 standard of 295. The passing rates in English Language Skills was 87% for university students, 71% for community college students, and 71% for private college students.

Essay. As can be seen in Table 3.1, Essay performance in 1989-90 was good until one realizes that students only had to meet the 1986 standard of 4. Essay writing is likely to be a challenging area after the Essay standard of 5 is implemented in August 1991.

Conclusion

Teaching essay writing and tutoring in mathematics are labor intensive processes. Hopefully, community colleges, private colleges and state universities will be able to determine effective ways to deploy their faculty to meet the challenge of the standard of 5 in Essay writing and 295 in Mathematics.

Readers should not be sanguine about seeing dramatic improvements in student CLAST performance in the near future. Results presented in this report show that state-wide performance on CLAST has been relatively stable over the past five years (see Table 3.3). In addition, the results have been presented as state-wide aggregates. This means that variations in CLAST performance among students and institutions are masked. Therefore, it would be advantageous for institutions to take the initiative to analyze their data by individual student to determine which students are having difficulty and in which areas so that tailored interventions can be implemented.

The purpose of the section which follows is to describe what institutions can do to enhance instruction and learning of skills in mathematics and communications.

Institutional Practices Associated with High CLAST Performance

In August 1989 the State Board of Education reviewed the desirability of implementing the 1989 CLAST standards. Based on a review of CLAST results, the State Board affirmed the standard of 295 for Reading and English Skills, increased the Mathematics standard to 285, and held the Essay standard at 4 in the belief that a score of 5 would result in adverse affects on student passing rates. The State Board also requested community colleges and universities to submit institutional plans for improving students' CLAST performance. These plans were received by the respective governing boards, i.e., the State Board of Community Colleges and the Board of Regents in May 1990. The plans were summarized (Division of Community Colleges, 1990) and several commonalities were found among the them; they included intents to:

Enhance Advisement and Tracking Systems. Where feasible, utilize electronic transfer of records or require students to submit current transcripts and test scores to those who provide intensive support and on-going advisement. Use computer tracking systems to enhance advising and maintain personal contact with at-risk students.

Seek Early Diagnosis. Monitor student performance by computer tracking systems from early diagnosis and college preparatory course placement to the completion of CLAST requirements. Utilize departmental exams which test for CLAST skills for identifying deficiencies and prescribing remedial learning activities;

Enhance Review Courses. Add courses where needed in reading, writing and math and offer workshops and mini-courses to increase test-taking skills;

Opportunities to be Tested. Develop and utilize departmental examinations which simulate CLAST testing; use a computerized version of CLAST to provide many opportunities for students to practice skills, receive feedback on deficient skills, and assess progress toward achieving the CLAST skills.

Enhance Student Accountability. Require advisors to sign off on registration and/or prohibit students from registering unless they have completed necessary courses. Require students to show documentation of remediation before retaking failed CLAST subtests;

Enhance Accountability for Teaching CLAST Skills. Utilize standardized departmental examinations and student evaluations of faculty to determine if they are covering CLAST skills in appropriate courses. Visit classrooms to conduct detailed analyses of accomplishments and provide feedback on performance until desired improvements can be achieved and maintained.

Provide Role Models. Intensify recruitment and hiring practices to secure more minority faculty members. Visit graduate schools, use national vitae banks, involved successful students as mentors and involve the minority community in identifying candidates for employment who will influence students needing motivation and intensive support.

Increase Student and Faculty Awareness. Increase notices in local publications of CLAST requirements and resources for meeting them; provide communications to both students and faculty. Utilize student activities (e.g., rap contests) to make students aware, to continue skills review, and seek assistance from faculty.

Provide Faculty Development and Rewards. Provide faculty with opportunities to attend local, state and national conferences and to conduct research relating to determining the needs of at-risk students--especially minority students. Use Staff and Program Development (SPD) funds to train and reward faculty for renewal efforts.

Enhance Articulation. Establish joint committees between the colleges and school district supervisors, teachers, and counselors to address CLAST requirements and student preparation. Invite high school personnel to visit CLAST skills courses and to serve as test proctors during CLAST administrations. Invite district personnel to participate in CLAST workshops.

Administrative Characteristics

A report entitled, "A Study of College-Level Academic Skills Remediation in Florida's Community Colleges," was published in December 1988. The researchers made site visits to community colleges with high and low pass rates on CLAST. Based on these visits they found characteristics which distinguished the high from low performing institutions. Many of these characteristics have been incorporated in the institutional plans highlighted above. However, administrative characteristics was a critical area not covered in the items summarized above. These characteristics are necessary to ensure that institutional plans are implemented effectively. The characteristics include:

- Key administrators accept the purpose of CLAST and take responsibility for their institution to assure that students acquire the skills needed to pass.
- Key administrators are willing to make and enforce local decisions necessary to assure that students will receive support services on a timely basis.
- Key administrators make accurate interpretations of state policy and urge college personnel to advise students personally about their level of preparedness to take the test and about the support services available.
- There is a high level of college-wide collaboration and coordination between all appropriate resources to identify problem areas, to eradicate program weaknesses, to maintain a

cohesive front in order to direct and monitor student's use of available support services, and to work collectively to meet other common college-wide goals for improvement.

Using CLAST Results for Academic Advisement

The College-Level Academic Skills Program Office and the State Test Administrator provide information which can facilitate academic advising regarding the college-level skills in communication and mathematics. For example, each student receives an Individual Score Report. This report displays the student's performance: (a) on each subtest, and (b) his/her performance in each broad skill area within the subtest.

The State Test Administrator now provides each institution with a Pass/Fail Roster which lists student performance by subtest score and whether he/she passed. The information contained in this printout is useful for monitoring student performance on CLAST. However, in its present form it is difficult to share with academic advisors. It would be better if advisors could receive a copy of the student's Individual Score Report to identify CLAST failures so that follow-up activities can be initiated. These follow-up activities should include academic advising for course selection, referral to study skills courses, and other support services.

References

Bureau of Program Support Services. (December, 1988). "A Study of College-Level Academic Skills Remediation in Florida's Community Colleges. Tallahassee, FL: Division of Community Colleges.

Division of Community Colleges. (1990). "Institutional Plans to Improve Student Performance on the CLAST: 1990 Highlights." Tallahassee, FL: Author.

Nickens, J. (1989). Profile of College Students Who Repeatedly Fail a CLAST Subtest. Gainesville, FL: Institute of Higher Education, University of Florida.

PART 8. RECOMMENDATIONS

The College-Level Academic Skills Program (CLASP) was mandated by the Florida Legislature when it enacted HB 1689 in 1979. The program has been in operation for almost ten years; the desired standards will be completely in place in August 1991. The purpose of the recommendations which follow is to suggest what institutions and policy makers can do to help students acquire effective levels of skill in communication and mathematics. These recommendations address components of Florida's system of education including its state educational agencies, secondary schools, community colleges and universities. If these agencies and institutions are to comprise an effective system, they must work together to achieve the mutually shared goal of mastering the college-level skills in communication and mathematics. With this system perspective in mind, the Standing Committee on Student Achievement recommends that:

Reporting and Advising

1. The Department of Education should develop a CLAST student report for follow-up and advising.

   Rationale. Currently, the State Test Administrator provides a pass/fail roster to each institution. In its present form, the pass/fail roster is difficult to disseminate and use by advisors and faculty. It would be more helpful if they could receive a student report which could be used for diagnosis and academic advising. The proposed student report should present results by broad skill cluster. The percentage of items passed in each skill cluster needs to be interpreted carefully because item difficulty may vary from one administration to another. It would be helpful to provide the range of percent passing a skill cluster, both within and among institutions, to help the student and advisor interpret the test results.

2. Students should be advised to begin taking the required Gordon Rule mathematics and writing courses during their first 18 college-level credit hours prior to taking the CLAST.

   Rationale. Previous research on CLAST failures suggests that lack of preparation is the primary reason why students fail. It therefore makes sense to require students to take courses in communications and mathematics before they take the CLAST. There is time for this now that students must complete 18 credits of college-level work before they are eligible to take CLAST.

Placement Testing

3. The Department of Education should develop one placement test for use in academic advising.

   Rationale. Placement testing is required by state board rule. Currently, there are four approved placement tests, i.e., SAT, ACT, MAPS, and ASSET, but they present problems. First, the SAT and ACT were developed for college admissions purposes--not for placement. Second, item content on the four tests relates to CLAST item content only to a limited degree. Third, the current cut-off scores are not in concordance across all tests. Fourth, current placement test cut-off scores have not been empirically validated using criteria such as grades in related college-level courses.

   A common placement test based on CLAST skills would provide useful information for academic advising and course placement. It would also permit more valid interpretations of student performance upon exit from high school.

Articulation

4. The Department of Education should involve the Division of Public Schools in articulation efforts between high schools and colleges regarding the college-level skills in mathematics and communications.

Rationale. Earlier studies have shown that students who chronically fail CLAST subtests either did not take appropriate courses in high school or received low grades in such courses. Clearly, students should realize that the college-level skills are important regardless of whether they seek to earn a baccalaureate degree or a two-year technical certificate. Students desiring to major in technical fields need to master the college-level skills as well as students who desire to transfer to universities for baccalaureate degrees. Thus, students either in college prep or technical prep programs both need mastery of high levels of skill in communications and mathematics.

Preparation for CLAST

5. Institutions should require students to show that they have engaged in appropriate remedial activities prior to retaking a CLAST subtest which they have failed.

Rationale. It has become apparent that many students who fail CLAST subtests retake them without engaging in remedial activities. Retaking CLAST without adequate preparation results in a waste of state and institutional resources. Students should be asked to document what they have done to prepare to retake a failed subtest. "Appropriate remedial activities" are not restricted to course work.

6. The Department of Education should develop a CLAST practice test for optional use by students in Florida's postsecondary institutions.

Rationale. Institutions that have experimented with giving a CLAST practice test report that both students and their teachers find such a testing experience useful. The Department of Education has CLAST items which are no longer used. These items could be used to construct practice tests which would closely match the kinds of items on CLAST. Making such a practice test available through the Department of Education would eliminate the time and effort required by institutions to construct such a test.

7. The Department of Education should develop CLAST-related instructional packages to assist students to prepare for the test.

Rationale. To facilitate preparation to pass CLAST, it would be useful to have instructional packages that are closely aligned to the skills measured by CLAST. These instructional packages would be helpful for students preparing to take CLAST for the first time as well as those in need of remediation because they have failed a subtest.

Feedback to Students

8. Students who fail the CLAST Essay should be permitted to request and receive a copy of the essay; a fee should be charged to defray costs.

Rationale. Performance can be improved if a student receives specific feedback. Since CLAST Essays are holistically graded, students currently receive only a numerical score. If a copy of the student's CLAST essay were provided, it could be the basis for specific analysis and constructive feedback from composition teachers working with the student.

Waiver Policy

9. Postsecondary institutions in Florida should be discouraged from granting waivers for failed subtests except in extreme cases where it can be documented that the student has acquired the skills to the level required by the subtest.

Rationale. Granting waivers indiscriminantly is a disservice to students because it reinforces the idea that the college-level skills are unimportant. The waiver policy does not permit a student to be waived from demonstrating that he or she has acquired the skills measured by the failed subtest (see 6A-10.0311, FAC). The waiver should be used only in those cases where a student has exhausted all reasonable possibilities to pass the failed subtest and can provide alternative documentation that the CLAST skills in question have been acquired.

Authentic Testing

10. The Mathematics Skills Task Force should be encouraged to increase the number of production items included on CLAST.

Rationale. Multiple-choice tests may not measure students' higher level thinking. Ability to solve problems is different from selecting a solution prepared by someone else. New developments in testing now allow students to produce answers and show their work on their answer sheets. Different kinds of mathematical thinking skills can be assessed by using authentic testing procedures designed to measure processing skills and application of concepts.

Evaluation of Improvement Efforts

11. Each Florida postsecondary institution should use CLAST data to evaluate the effectiveness of its CLAST performance improvement plan.

Rationale. Postsecondary institutions in Florida have submitted plans for improving student performance on CLAST. Each institution can effectively use CLAST data to assess the results of its performance improvement efforts.

Maintaining Standards

12. The Standing Committee on Student Achievement endorses the CLAST standards which will go into effect in August 1991.

Rationale. The original 1989 CLAST standards for Reading and English Skills became effective in August 1989 as planned. In August 1989, the Mathematics standard was raised ten points to 285 while the Essay remained at 4 with the proviso that the original 1989 Mathematics and Essay standards would go into effect in August 1991. The Standing Committee believes that the original 1989 standards should be fully implemented. Doing so will communicate a reasonable expectation for higher achievement in communication and mathematics to both students and faculty. Students who do not meet the 1989 standards on their first try will have multiple opportunities to study and retake failed subtests.

Appendix A

THE STANDING COMMITTEE ON STUDENT ACHIEVEMENT:

THE MEMBERS AND THEIR AFFILIATION

STANDING COMMITTEE ON STUDENT ACHIEVEMENT FOR 1989-90

Roster

Students

Ms. Linda Vickers, Student
University of Florida

Public Schools

Dr. Jane Chaney, Brevard County Schools

Ms. Ruth Handley, Highlands County Schools

Dr. Robin Largue, Escambia County Schools

Private Colleges and Universities

Dr. R. Scott Baldwin, University of Miami

Dr. Richard Burnette, Florida Southern College

Dr. E. Garth Jenkins, Stetson University

Community Colleges

Dr. Elizabeth Cobb, Florida Community College at Jacksonville

Dr. John Losak, Miami-Dade Community College

Dr. Linda B. Adair, Gulf Coast Community College

Universities

Dr. Lola Kerlin, Florida Atlantic University

Dr. Robert G. Stakenas,* Florida State University

Dr. LeVester Tubbs, University of Central Florida

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* Dr. Stakenas served as Committee Chairperson.

Appendix B

CLAST PERFORMANCE BY INSTITUTION AND BY SUBTEST

FOR 1989-90

CLAST RESULTS FOR ANNUAL 1989-90

MEAN SCALE SCORES AND PERCENT OF EXAMINEES MEETING 1989 STANDARDS

FIRST-TIME EXAMINEES IN EACH PUBLIC INSTITUTION

REGION AND INSTITUTION	ESSAY			ENG LANG SKILLS			READING			MATHEMATICS			ALL SUBTESTS	
	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS
PANHANDLE REGION	12,896	95	5.1	12,915	82	322	12,915	86	324	12,897	84	310	12,854	69
CHIPOLA JUNIOR COLLEGE	285	96	5.2	285	81	321	285	84	320	283	78	307	283	64
FLORIDA A & M UNIVERSITY	1,501	88	4.6	1,507	71	311	1,508	73	310	1,507	73	302	1,499	53
FLORIDA STATE UNIVERSITY	5,381	98	5.5	5,389	90	330	5,388	94	332	5,384	94	320	5,366	83
GULF COAST COMMUNITY COLLEGE	1,190	94	5.0	1,191	77	317	1,192	84	321	1,191	74	303	1,187	58
NORTH FLORIDA JUNIOR COLLEGE	141	94	4.6	141	69	313	141	71	312	140	64	295	140	48
OKALOOSA-WALTON JUNIOR COLLEGE	971	94	5.0	969	78	318	969	81	319	966	74	302	965	58
PENSACOLA JUNIOR COLLEGE	1,271	92	4.7	1,273	82	321	1,272	83	319	1,271	76	303	1,267	60
TALLAHASSEE COMMUNITY COLLEGE	1,534	94	5.0	1,537	76	315	1,537	82	318	1,532	80	304	1,528	60
UNIVERSITY OF WEST FLORIDA	622	91	5.1	623	85	328	623	87	326	623	83	309	619	69
CROWN REGION	11,214	95	5.2	11,223	85	325	11,224	89	327	11,214	85	314	11,173	72
CENTRAL FLORIDA COMMUNITY COLLEGE	855	91	4.9	855	74	315	854	78	315	855	68	297	854	53
FLORIDA COMMUNITY COLLEGE AT JAX	2,473	92	4.8	2,478	77	318	2,478	82	319	2,476	75	302	2,464	58
LAKE CITY COMMUNITY COLLEGE	181	92	4.9	181	71	315	181	79	318	181	77	306	181	57
SANTA FE COMMUNITY COLLEGE	1,471	93	4.9	1,475	76	315	1,475	82	319	1,473	77	302	1,465	58
ST. JOHNS RIVER COMMUNITY COLLEGE	344	95	5.0	343	84	324	343	90	325	343	87	310	343	70
UNIVERSITY OF FLORIDA	5,083	97	5.5	5,085	93	333	5,086	96	336	5,079	96	326	5,062	87
UNIVERSITY OF NORTH FLORIDA	807	96	5.2	806	88	328	807	93	330	807	87	314	804	76
EAST CENTRAL REGION	8,599	94	5.1	8,606	81	321	8,606	86	323	8,600	84	310	8,574	67
BREVARD COMMUNITY COLLEGE	1,954	93	5.0	1,957	76	317	1,956	82	320	1,952	79	306	1,946	61
DAYTONA BEACH COMMUNITY COLLEGE	1,087	93	5.0	1,088	76	317	1,088	83	320	1,088	77	304	1,086	61
INDIAN RIVER COMMUNITY COLLEGE	428	96	5.2	429	93	335	429	91	326	429	95	322	428	82
LAKE SUMTER COMMUNITY COLLEGE	225	96	5.1	226	90	332	226	93	328	228	90	316	225	78
SEMINOLE COMMUNITY COLLEGE	830	95	5.0	832	78	318	832	84	322	832	86	311	830	65
UNIVERSITY OF CENTRAL FLORIDA	2,101	96	5.3	2,100	87	329	2,100	92	330	2,099	89	316	2,091	77
VALENCIA COMMUNITY COLLEGE	1,974	93	5.0	1,974	78	317	1,975	84	321	1,972	82	307	1,968	62
WEST CENTRAL REGION	11,191	94	5.0	11,200	81	320	11,198	86	322	11,200	83	309	11,178	65
EDISON COMMUNITY COLLEGE	942	96	5.1	943	80	321	943	83	320	943	79	305	942	61
HILLSBOROUGH COMMUNITY COLLEGE	1,433	94	4.9	1,437	81	319	1,436	83	318	1,435	89	313	1,431	66
MANATEE COMMUNITY COLLEGE	1,189	94	4.9	1,191	78	318	1,190	84	320	1,188	81	306	1,188	63
PASCO-HERNANDO COMMUNITY COLLEGE	675	95	5.0	678	79	321	678	83	321	678	77	308	675	61
POLK COMMUNITY COLLEGE	753	92	4.9	753	78	318	753	82	320	753	82	310	753	63
SOUTH FLORIDA COMMUNITY COLLEGE	249	91	4.8	250	72	315	250	74	314	250	66	298	248	48
ST. PETERSBURG JUNIOR COLLEGE	2,646	94	4.9	2,646	79	317	2,646	86	322	2,646	83	309	2,643	64
UNIVERSITY OF SOUTH FLORIDA	3,304	96	5.2	3,302	85	325	3,302	90	327	3,307	85	311	3,298	71
SOUTH REGION	18,498	81	4.4	18,535	63	306	18,538	67	308	18,522	62	294	18,431	42
BROWARD COMMUNITY COLLEGE	3,526	89	4.7	3,528	71	312	3,530	74	312	3,521	71	299	3,511	49
FLORIDA ATLANTIC UNIVERSITY	1,222	93	5.1	1,226	84	323	1,225	87	326	1,227	80	307	1,221	67
FLORIDA INTERNATIONAL UNIVERSITY	1,470	89	4.9	1,473	77	318	1,473	84	320	1,473	76	305	1,466	58
FLORIDA KEYS COMMUNITY COLLEGE	112	96	5.0	112	85	319	112	86	322	112	75	300	112	64
MIAMI-DADE COMMUNITY COLLEGE	10,458	74	4.1	10,484	53	299	10,486	57	300	10,477	52	288	10,413	31
PALM BEACH JUNIOR COLLEGE	1,710	92	4.9	1,712	79	317	1,712	84	319	1,712	77	301	1,708	61
STATE TOTALS	62,398	91	4.9	62,479	77	318	62,481	81	319	62,433	77	306	62,210	61
STATE UNIVERSITIES	21,491	95	5.3	21,511	87	327	21,512	91	329	21,506	89	316	21,426	76
COMMUNITY COLLEGES	40,907	88	4.7	40,968	71	313	40,969	76	314	40,927	72	300	40,784	52

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CLAST RESULTS FOR ANNUAL 1989-90

MEAN SCALE SCORES AND PERCENT OF EXAMINEES MEETING 1989 STANDARDS
BY GENDER AND RACIAL/ETHNIC CATEGORY

FIRST-TIME EXAMINEES IN ALL PUBLIC INSTITUTIONS

EXAMINEE CATEGORY	ESSAY			ENG LANG SKILLS			READING			MATHEMATICS			ALL SUBTESTS	
	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS
ALL	62,398	91	4.9	62,479	77	318	62,481	81	319	62,433	77	306	62,210	61
MALE	26,209	89	4.7	26,252	73	314	26,252	82	320	26,225	83	311	26,120	61
FEMALE	36,189	92	5.0	36,227	79	320	36,229	80	319	36,208	74	302	36,090	60
WHITE, NON-HISPANIC	43,848	96	5.2	43,881	84	324	43,879	89	326	43,849	85	311	43,734	71
BLACK, NON-HISPANIC	6,593	79	4.2	6,610	58	302	6,614	58	301	6,605	53	287	6,567	33
HISPANIC	8,424	77	4.2	8,451	58	302	8,450	63	305	8,442	59	292	8,389	37
AMERICAN INDIAN/ALASKAN NATIVE	147	88	4.9	146	68	313	146	79	320	146	75	303	146	55
ASIAN/PACIFIC ISLANDER	1,657	71	4.2	1,657	66	309	1,657	66	308	1,656	83	311	1,651	46
NON-RESIDENT ALIEN	1,313	68	4.0	1,315	56	301	1,315	58	301	1,314	72	302	1,307	35
UNKNOWN RACE	416	77	4.4	419	63	305	420	68	308	421	62	296	416	44

FIRST-TIME EXAMINEES IN ALL PUBLIC UNIVERSITIES

EXAMINEE CATEGORY	ESSAY			ENG LANG SKILLS			READING			MATHEMATICS			ALL SUBTESTS	
	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS
ALL	21,491	95	5.3	21,511	87	327	21,512	91	329	21,506	89	316	21,426	76
MALE	9,581	94	5.1	9,594	84	323	9,595	91	329	9,588	91	321	9,548	76
FEMALE	11,910	96	5.4	11,917	89	330	11,917	91	329	11,918	87	312	11,878	76
WHITE, NON-HISPANIC	15,892	98	5.5	15,899	91	331	15,898	95	334	15,895	92	320	15,848	83
BLACK, NON-HISPANIC	2,799	90	4.7	2,809	72	312	2,810	74	311	2,809	72	299	2,791	51
HISPANIC	1,533	89	4.9	1,535	79	321	1,535	85	322	1,534	83	309	1,527	64
AMERICAN INDIAN/ALASKAN NATIVE	30	93	5.0	30	70	324	30	93	331	30	87	315	30	70
ASIAN/PACIFIC ISLANDER	651	82	4.7	651	79	320	651	84	321	650	94	323	647	67
NON-RESIDENT ALIEN	441	70	4.1	440	62	305	440	66	306	440	80	308	438	42
UNKNOWN RACE	145	87	5.0	147	76	316	148	85	323	148	80	309	145	64

FIRST-TIME EXAMINEES IN ALL COMMUNITY COLLEGES

EXAMINEE CATEGORY	ESSAY			ENG LANG SKILLS			READING			MATHEMATICS			ALL SUBTESTS	
	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS
ALL	40,907	88	4.7	40,968	71	313	40,969	76	314	40,927	72	300	40,784	52
MALE	16,628	86	4.5	16,658	67	308	16,657	77	315	16,637	78	306	16,572	52
FEMALE	24,279	90	4.8	24,310	74	315	24,312	75	314	24,290	67	297	24,212	52
WHITE, NON-HISPANIC	27,956	95	5.0	27,982	80	319	27,981	85	322	27,954	81	306	27,886	64
BLACK, NON-HISPANIC	3,794	72	3.9	3,801	47	295	3,804	46	293	3,796	39	278	3,776	20
HISPANIC	6,891	74	4.1	6,916	53	298	6,915	58	301	6,908	53	288	6,862	31
AMERICAN INDIAN/ALASKAN NATIVE	117	87	4.9	116	68	310	116	76	317	116	72	300	116	52
ASIAN/PACIFIC ISLANDER	1,006	64	3.9	1,006	57	301	1,006	54	300	1,006	76	304	1,004	32
NON-RESIDENT ALIEN	872	67	3.9	875	54	299	875	54	299	874	67	299	869	31
UNKNOWN RACE	271	72	4.1	272	57	299	272	58	300	273	52	289	271	33

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CLAST RESULTS FOR ANNUAL 1989-90

MEAN SCALE SCORES AND PERCENT OF EXAMINEES MEETING 1989 STANDARDS

FIRST-TIME EXAMINEES IN EACH INDEPENDENT INSTITUTION

INSTITUTION	ESSAY			ENG LANG SKILLS			READING			MATHEMATICS			ALL SUBTESTS	
	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS
BARRY UNIVERSITY	171	92	5.0	172	78	319	172	79	315	172	70	299	171	54
BETHUNE-COOKMAN COLLEGE	375	69	3.7	376	42	290	376	38	288	377	29	272	374	14
CLEARWATER CHRISTIAN COLLEGE	78	97	5.2	78	86	327	78	81	319	78	64	294	78	56
COLLEGE OF BOCA RATON	50	96	4.8	50	62	306	50	58	305	50	52	285	50	38
ECKERD COLLEGE	158	98	5.7	158	87	331	158	94	331	159	82	307	158	72
EDWARD WATERS COLLEGE	89	62	3.5	89	31	284	89	35	286	89	9	259	89	2
EMBRY-RIDDLE AERONAUTICAL UNIV.	139	94	4.8	139	83	319	139	87	321	138	91	316	138	73
FLAGLER COLLEGE	337	97	5.5	338	82	322	337	92	325	338	82	302	337	66
FLORIDA BAPTIST THEOL. COLLEGE	159	94	4.9	159	65	311	159	75	313	159	45	281	159	35
FLORIDA COLLEGE	106	98	5.3	106	81	327	106	87	327	105	78	307	105	68
FLORIDA INSTITUTE OF TECHNOLOGY	71	99	5.4	71	96	331	71	96	334	71	94	326	71	85
FLORIDA MEMORIAL COLLEGE	723	51	3.2	726	25	282	726	28	281	727	11	260	718	5
FLORIDA SOUTHERN COLLEGE	577	97	5.3	578	86	326	578	90	326	578	85	309	577	72
HERITAGE COLLEGE	3	100	5.0	3	100	346	3	100	339	3	67	287	3	67
INTERNATIONAL FINE ARTS COLLEGE	7	86	4.4	7	43	302	7	57	315	7	43	272	7	43
JACKSONVILLE UNIVERSITY	189	98	5.3	190	84	323	190	91	327	190	84	310	189	72
JONES COLLEGE	3	33	3.7	3	67	298	3	67	300	3	33	273	3	0
MIAMI CHRISTIAN COLLEGE	15	93	5.1	15	80	342	15	93	324	15	80	302	15	67
NEC - TECHNICAL INST. (TAMPA)	26	73	4.0	26	42	292	26	77	306	26	54	292	26	27
NOVA UNIVERSITY	227	92	4.9	227	74	317	227	81	318	227	62	294	227	49
PALM BEACH ATLANTIC COLLEGE	245	97	5.2	245	79	321	245	87	323	244	70	299	244	58
RINGLING SCHOOL OF ART	47	96	4.9	49	65	307	49	80	310	49	39	280	47	30
ROLLINS COLLEGE	139	99	5.8	139	91	333	139	96	338	139	86	314	139	81
S.E. COLLEGE ASSEMBLIES OF GOD	156	96	5.1	156	85	327	156	88	327	156	74	301	156	66
ST. LEO COLLEGE	175	95	4.9	174	68	312	174	70	312	174	53	287	174	41
ST. THOMAS UNIVERSITY	133	74	4.0	132	48	294	132	57	298	133	35	275	131	21
STETSON UNIVERSITY	367	99	5.7	368	93	333	367	94	332	367	89	314	367	80
UNIVERSITY OF MIAMI	768	97	5.6	769	91	332	769	93	333	769	87	320	767	78
UNIVERSITY OF TAMPA	177	97	5.2	177	77	318	177	85	322	177	74	302	177	62
WARNER SOUTHERN COLLEGE	111	90	4.8	111	68	311	111	72	312	111	41	281	111	30
WEBBER COLLEGE	51	80	4.0	51	49	301	51	49	300	51	35	280	51	20
TOTAL	5,872	88	4.9	5,882	71	315	5,880	75	316	5,882	63	296	5,859	52

CLAST RESULTS FOR ANNUAL 1989-90

MEAN SCALE SCORES AND PERCENT OF EXAMINEES MEETING 1989 STANDARDS
BY GENDER AND RACIAL/ETHNIC CATEGORY

FIRST-TIME EXAMINEES IN ALL INDEPENDENT INSTITUTIONS

EXAMINEE CATEGORY	ESSAY			ENG LANG SKILLS			READING			MATHEMATICS			ALL SUBTESTS	
	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS	MEAN	NUMBER TESTED	% PASS
ALL	5,872	88	4.9	5,882	71	315	5,880	75	316	5,882	63	296	5,859	52
MALE	2,374	87	4.8	2,383	70	313	2,381	77	317	2,381	70	302	2,369	54
FEMALE	3,498	88	4.9	3,499	72	317	3,499	74	315	3,501	59	292	3,490	51
WHITE, NON-HISPANIC	3,663	97	5.3	3,668	84	325	3,667	89	326	3,667	78	306	3,661	67
BLACK, NON-HISPANIC	1,353	63	3.6	1,358	36	288	1,358	37	287	1,359	21	267	1,346	12
HISPANIC	583	88	4.9	583	74	316	583	81	319	584	69	300	581	56
AMERICAN INDIAN/ALASKAN NATIVE	9	67	3.7	9	44	297	9	67	303	9	33	279	9	33
ASIAN/PACIFIC ISLANDER	100	95	5.4	100	89	324	100	80	321	99	81	311	99	71
NON-RESIDENT ALIEN	112	69	3.9	112	50	301	112	51	294	112	46	282	112	27
UNKNOWN RACE	52	83	4.8	52	71	318	51	75	318	52	65	300	51	57

Appendix C

PERCENT MINORITY AND INSTITUTIONAL PASSING RATES BY SUBTEST
PUBLIC AND PRIVATE INSTITUTIONS
FOR 1989-90

PERCENT MINORITY* AND INSTITUTIONAL PASSING RATES BY SUBTEST

Public Institutions: 1989-90

Public Institutions	Percent Minority	Total Percent Passing				
		Essay	English Language Skills	Reading	Mathematics	Four out of Four
Okaloosa-Walton Community College	2.7%	94%	78%	81%	74%	58%
Pasco-Hernando Community College	3.7%	95%	79%	83%	77%	61%
Manatee Community College	3.7%	94%	78%	84%	81%	63%
Lake City Community College	4.7%	92%	71%	79%	77%	57%
Edison Community College	4.8%	96%	80%	83%	79%	61%
South Florida Community College	6.3%	91%	72%	74%	66%	48%
St. Petersburg Junior College	6.5%	94%	79%	86%	83%	64%
Lake-Sumter Community College	6.6%	96%	90%	93%	90%	78%
Seminole Community College	6.6%	95%	78%	84%	86%	65%
University of West Florida	7.1%	91%	85%	87%	83%	69%
Gulf Coast Community College	7.4%	94%	77%	84%	74%	58%
Pensacola Junior College	9.1%	92%	82%	83%	76%	60%
Florida State University	9.3%	98%	90%	94%	94%	83%
St. Johns River Community College	9.8%	95%	84%	90%	87%	70%
Sante Fe Community College	9.8%	93%	76%	82%	77%	58%
University of South Florida	10.0%	96%	85%	90%	85%	71%
Central Florida Community College	10.4%	91%	74%	78%	68%	53%
Brevard Community College	10.5%	93%	76%	82%	79%	61%
University of North Florida	10.5%	96%	88%	93%	87%	76%
University of Central Florida	11.0%	96%	87%	92%	89%	77%
Daytona Beach Community College	11.2%	93%	76%	83%	77%	61%
Polk Community College	12.0%	92%	78%	82%	82%	63%
Florida Atlantic University	13.2%	93%	84%	87%	80%	67%

* Percent minority is based on the percentage of Black and Hispanic first-time test-takers who took CLAST in October 1989.

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PERCENT MINORITY AND INSTITUTIONAL PASSING RATES BY SUBTEST

Public Institutions: 1989-90

Public Institutions	Percent Minority	Total Percent Passing				
		Essay	English Language Skills	Reading	Mathematics	Four out of Four
Valencia Community College	13.3%	93%	78%	84%	82%	62%
Chipola Junior College	13.6%	96%	81%	84%	78%	64%
Tallahassee Community College	13.9%	94%	76%	82%	80%	60%
University of Florida	14.0%	97%	93%	96%	96%	87%
Florida Community College at Jacksonville	14.0%	92%	77%	82%	75%	58%
Palm Beach Community College	14.3%	92%	79%	84%	77%	61%
Indian River Community College	15.5%	96%	93%	91%	95%	82%
Hillsborough Community College	16.0%	94%	81%	83%	89%	66%
Florida Keys Community College	17.2%	96%	85%	86%	75%	64%
Broward Community College	18.5%	89%	71%	74%	71%	49%
North Florida Junior College	18.6%	94%	69%	71%	64%	48%
Florida International University	34.1%	89%	77%	84%	76%	58%
Miami-Dade Community College	67.5%	74%	53%	57%	52%	31%
Florida A & M University	90.9%	88%	71%	73%	73%	53%

PERCENT MINORITY* AND INSTITUTIONAL PASSING RATES BY SUBTEST

Private Institutions: 1989-90

Private Institutions	Percent Minority	Total Percent Passing				
		Essay	English Language Skills	Reading	Mathematics	Four out of Four
S.E. College Assemblies of God	0.0%	96%	85%	88%	74%	66%
Stetson University	2.9%	99%	93%	94%	89%	80%
Flagler College	3.9%	97%	82%	92%	82%	66%
Florida Baptist Theological College	4.2%	94%	65%	75%	45%	35%
Florida Southern College	5.2%	97%	86%	90%	85%	72%
Ringling School of Art	5.9%	96%	65%	80%	39%	30%
Florida College	6.1%	98%	81%	87%	78%	68%
Florida Institute of Technology	6.3%	99%	96%	96%	94%	85%
Embry-Riddle Aeronautical University	8.2%	94%	83%	87%	91%	73%
Eckerd College	9.3%	98%	87%	94%	82%	72%
St. Leo College	9.3%	95%	68%	70%	53%	41%
Clearwater Christian College	10.0%	97%	86%	81%	64%	56%
Palm Beach Atlantic College	10.5%	97%	79%	87%	70%	58%
NEC-Technical Institute (Tampa)	11.1%	73%	42%	77%	54%	27%
Rollins College	11.1%	99%	91%	86%	86%	81%
Jacksonville University	11.7%	98%	84%	91%	84%	72%
Warner Southern College	16.2%	90%	68%	72%	41%	30%
Webber College	17.4%	80%	49%	49%	35%	20%
University of Tampa	18.2%	97%	77%	85%	74%	62%
College of Boca Raton	22.2%	96%	62%	58%	52%	38%
Nova University	26.6%	92%	74%	81%	62%	49%
University of Miami	35.7%	97%	91%	93%	87%	78%
Barry University	61.8%	92%	78%	79%	70%	54%
St. Thomas University	75.6%	74%	48%	57%	35%	21%
Florida Memorial College	82.1%	51%	25%	28%	11%	5%
Edward Waters College	91.7%	62%	31%	35%	9%	2%
Bethune-Cookman College	94.0%	69%	42%	38%	29%	14%

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* Percent minority is based on the percentage of Black and Hispanic first-time test-takers who took CLAST in October 1989.

State of Florida
Department of Education
Tallahassee, Florida
Betty Castor, Commissioner
Affirmative action/equal opportunity employer